User manual – Health care platform & Patient app for HCPs

Get insight in the rehabilitation of your patients and provide close follow up

App & Healthcare platform version: 1.34.1 till current
Manual version: 11
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Link to e-learning: https://moveup.talentlms.com/index

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INSTRUCTIONS

Read carefully this instruction for use. Make sure that you know how to use moveUP,
but also understand the limitations of moveUP before you start using our service.
If you do have any questions on the use, contact moveUP.

In the final chapter of this document you find our contacts, which you can use during the use of our service, in case you would have technical problems with the application (moveUP dashboard or patient app) or when expertise is required about a care path.

The Healthcare practitioner can't give access to third parties to access the moveUP dashboard. Every other person can, even by accident, send out wrong information or adapt the patient profile, with the result that the advice sent by moveUP no longer corresponds with the needs of the patient.

In case the application is use while moveUP & b.clinic is not asked to do the follow-up of patients, the individual healthcare provider or the health care facility is responsible for the follow-up of the patient and the action that are carried out.

In compliance with the medical device legislation, you are required to report any complaints towards the application, any alteration regarding characteristics / specifications of the application and incidents / complications potentially linked to the use of the application to support@moveup.care. The AFMPS can also be contacted in case of incident via https://www.famhp.be/en/human_use/health_products/medical_devices_accessories/materiovigilance/how_notify

In compliance with the GDPR legislation, please report eventual data leaks linked to the use of moveUP.
Please, read the entire privacy policy : https://www.moveup.care/privacy

Warnings and precautions

- moveUP is not an emergency tool. In case of emergency please contact your doctor or call 112.
- moveUP is not intended to monitor/treat vital parameters of critical diseases.

- moveUP companion is not a replacement of any treatment you need to follow, but is used as an addition.
- Patients need to be aware if questionnaires are not filled out on frequent basis or not filled out trustworthy, the care team has more difficulty to know their health situation & evolution.

- The moveUP App offers personalized healthcare based on the patient's profile and therefore can not be shared, borrowed or traded between users. The information and advice of the moveUP application do not apply to a patient other than the one whose profile is stored in the application. The patient may not grant access to the moveUP App to third parties. Any other person can, even accidentally, send wrong information or change the profile of the patient, with the result that the moveUP-guided advice no longer corresponds to the needs of the patient.

With software, there is always a residual risk for bugs. If you have the feeling something is wrong or you don´t get a response in the app, please reach out to us via support@ or call 0800 88 008.

The moveUP IFU are only supplied in electronic format. If you need a full printed version plase contact us at the e-mail address info@moveup.care. This mail is available 24/7

INTENDED USE

For healthcare providers, moveUP provides efficient clinical management of pathologies and treatments. With the use of moveUP, valuable insights are given to the HCP/care team of the status of the patient and its evolution.

For patients, moveUP provides personalised information and instructions to help them managing their symptoms and progress in their rehabilitation. The intensity of follow-up is adapted based on patients' needs and timepoint in the patient pathway:

moveUP companion = monitoring and information, no active follow-up

moveUP companion offers targeted information and evolution reports to patients. Their care team takes the evolution reports into account in their further recovery when appropriate.

moveUP coach = active follow-up by healthcare team

moveUP coach offers targeted information and evolution reports to patients. Their care team is more actively involved and takes the evolution reports into account and can provide advice and exercise suggestions through the digital platform.

moveUP therapy = active follow-up by healthcare team, with data driven validated care protocol

moveUP therapy offers a data-driven validated care protocol with certain category and level of exercises and activities, specifically targeted to the individual patient. Their care team can manually adapt the data driven validated protocol when needed. Patients can fully rehabilitation with moveUP without leaving their home environment.

Optional functionality that can be enabled: interoperability with Class IIa continues passive motion (CPM) medical device. For knee and hip patients who are using a Class IIa CPM medical device, moveUP can interoperate with the Class IIa CPM software. moveUP acts as a facilitator to easy assign a designated CPM exercise protocol chosen by a physician to a patient and to display the performed CPM exercises in the medical dashboard.

Contra-indications and potential side effects

There are no contra-indications or known side effects.

Human body contact

No human body contact with patient or user, due to nature of the product (software).

Accessories/products used in combination

There are no accessories. If the patient has no compatible tablet/smartphone or activity tracker, moveUP can lease these devices to the patient. The leased devices are CE marked devices that meets the compatibility criteria outlined in the IFU for the app.

Device lifetime

2-years. Depending of the willingness of the user to update the app. We sent out a notification to recommend to update the app, to make sure the app will keep the performance & recent included features.

Claims

moveUP companion/coach/therapy

The intensity of follow-up is adapted based on the needs of the patient, via the moveUP Symptom & QoL monitoring tool.

moveUP enhances the clinical management of the patients, because early detection & management of complications is possible via the symptom & QoL monitoring tool

More efficient clinical management, such as the number of consultations can be reduced

Enforces therapy compliance / adherence

The correct information is provided at the right time

moveUP therapy

With the use of moveUP therapy knee & hip arthroplasty patients can fully rehabilitate via the in-app care team without leaving their home environment.

Intended users

moveUP is intended to be used by patients and healthcare providers. The main user of the mobile app and patient website is the patient.

Inclusion:

- Age: minimum 18 years / maximum no limit
- Health & condition: capable of performing basic activities of daily living
- Language: understanding one of the available languages of the app (Dutch, French, German, English)

Exclusion:

- Patients who are mentally incompetent or having troubles to express what they are feeling (for instance, mentally diseased people, people staying in elderly care centres, ...) are excluded.
- Patients who are not capable of operating a tablet/smartphone and activity tracker.
- Patients who can't understand one of the available languages of the app (Dutch, French, German, English)

The main user of the medical web interface is a healthcare practitioner (group) or clinical researcher (group), named the care team. The care team is able to operate a web interface via web browser on PC/tablet/smartphone. The healthcare practitioner needs to understand one of the available languages of the web interface (today only available in English).

COMPANY DETAILS

Head office Brussel: Parvis sainte-gudule 5,

B-1000 Brussels, Belgium Office Ghent:

Oktrooiplein 1, B-9000 Ghent, Belgium

Tel: 0800 88 008

Email: info@moveUP.care www.moveUP.care

moveUP

+G166G166MOVEUPV1340WS00+$$71341/16D202303100Y

Basic UDI-DI: ++G166MOVEUPV1340WS

If you need the eIFU in paper format please contact moveUP and we´ll supply you a copy in paper in 7 days.

moveUP supplies the IFU in electronic format due to the topology of the product (software) and the availability of the eIFU at any moment that is needed for the user.

In case of questions about the App, the tablet or the smart bracelet, you can contact moveUP via the following channels - in order of priority:

- Via the message system of the App. Please preface the message with **"Technical question:"**
- Via email to **support@moveup.care**
- Via phone during office hours: **0800 88 008**

CE

moveUP

Patient app

CE

moveUP

Available on Android devices

GET IT ON Google Play

Available on iOS devices

Download on the App Store

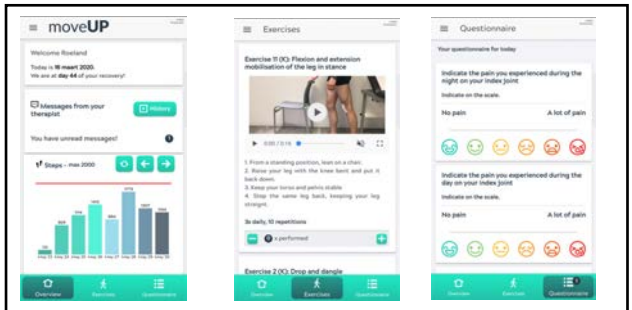
1

moveUP

Languages

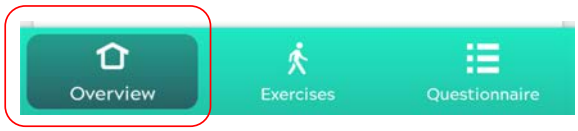
EN	The moveUP Patient app is available in English
NL	De moveUP patiëntenapplicatie is beschikbaar in het nederlands
FR	L'application moveUP destinée au patient est disponible en français
GE	Die Patientenanwendung moveUP ist in deutscher Sprache verfügbar

2



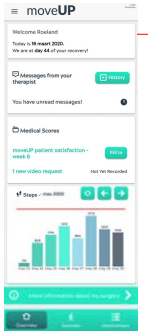
The patient navigates between 3 different tabs "Overview", "Exercises" or "Questions".

3



Navigating from left to right, we start with the "**Overview**" screen

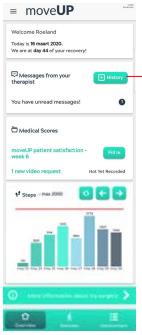
4



On top, you will find

- A warm welcome message
- Today's date
- Number of days since the surgery

5



Messaging function.

In the messaging function, patients can ask questions and voice their concerns.

The care team consisting out of specialized doctors and physical therapists to respond and give advice.

All messages are read by the physical therapists. Messages which are not within their professional competence are referred to the doctors.

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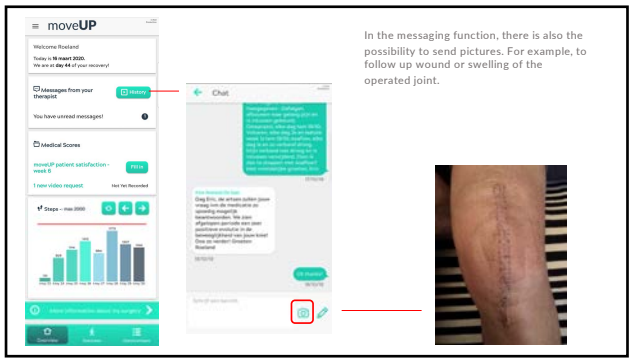
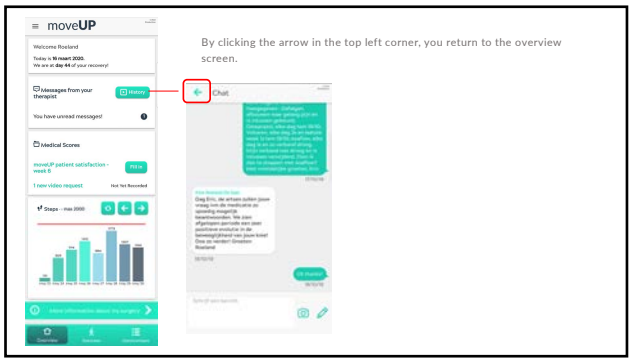
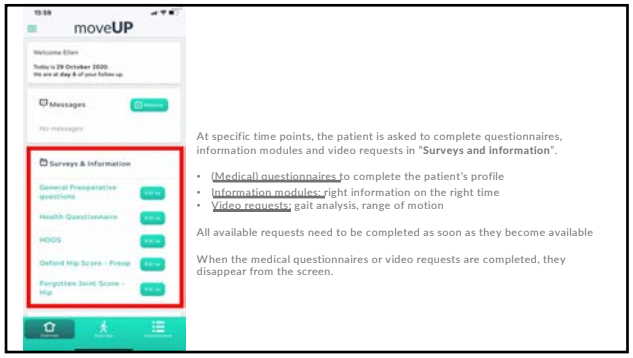

moveUP
In the messaging function, there is also the possibility to send pictures. For example, to follow up wound or swelling of the operated joint.

7


moveUP
By clicking the arrow in the top left corner, you return to the overview screen.

8


moveUP
At specific time points, the patient is asked to complete questionnaires, information modules and video requests in "Surveys and information".
(Medical) questionnaires to complete the patient's profile
Information modules: right information on the right time
Video requests: gait analysis, range of motion
All available requests need to be completed as soon as they become available
When the medical questionnaires or video requests are completed, they disappear from the screen.

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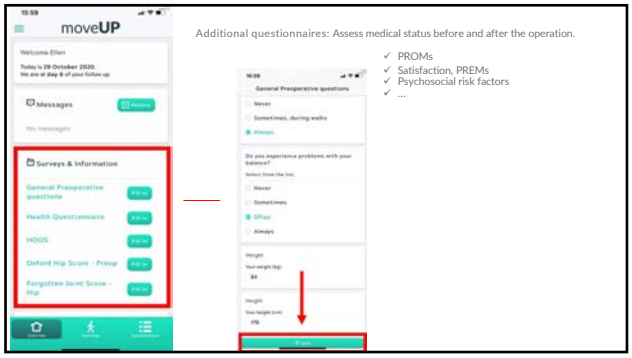
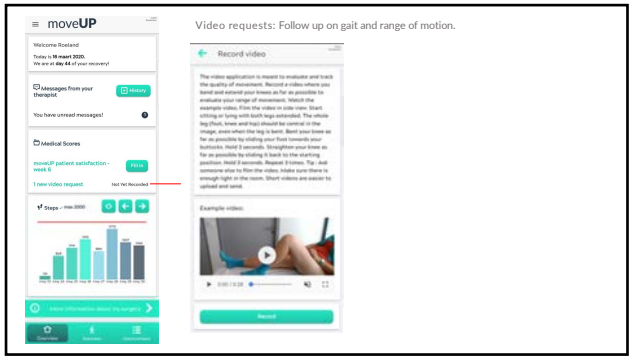
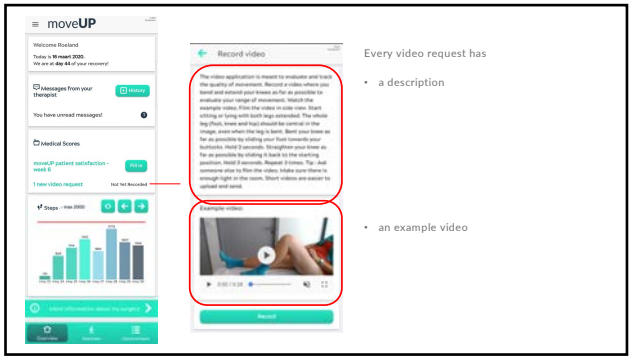

moveUP
Additional questionnaires: Assess medical status before and after the operation.
PROMs
Satisfaction, PREMs
Psychosocial risk factors
...

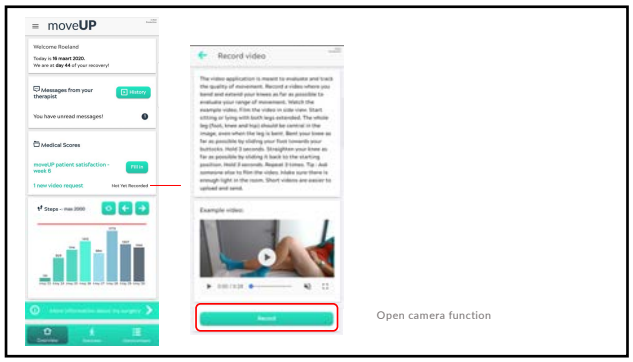
10


moveUP
Video requests: Follow up on gait and range of motion.

11


moveUP
Every video request has
a description
an example video

12



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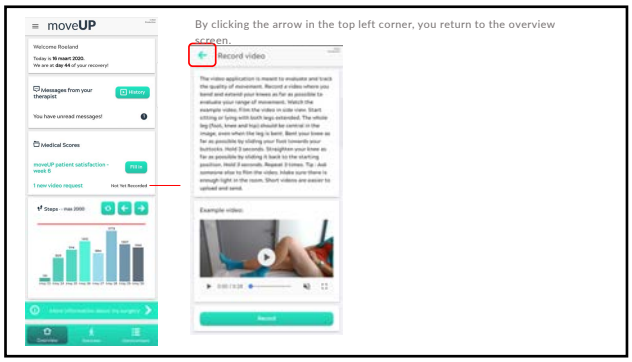

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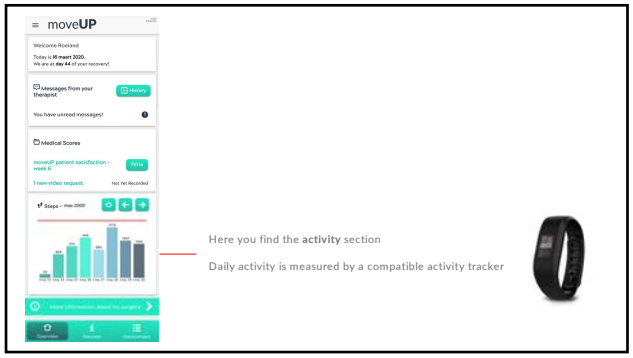

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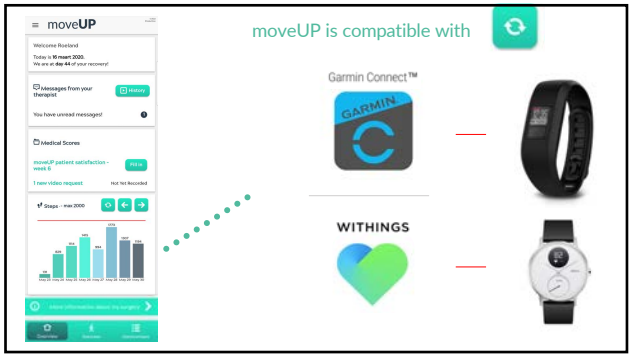

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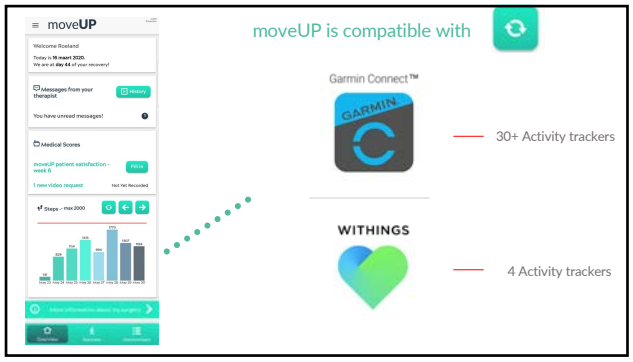

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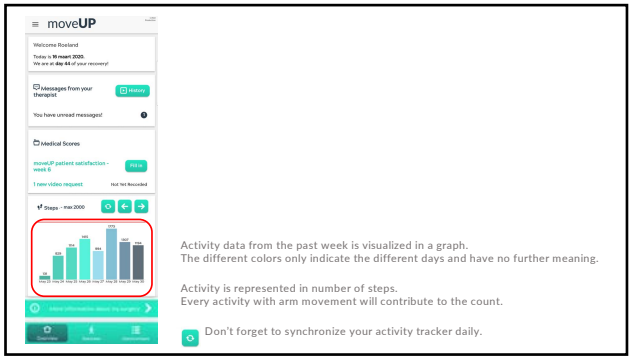

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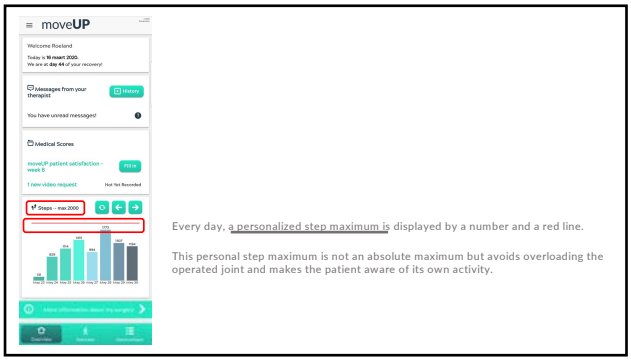
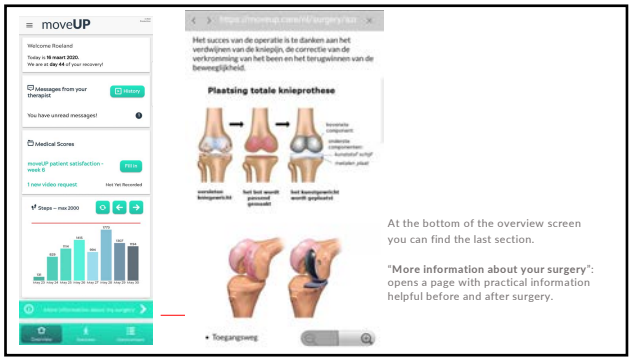


Every day, a personalized step maximum is displayed by a number and a red line.

This personal step maximum is not an absolute maximum but avoids overloading the operated joint and makes the patient aware of its own activity.

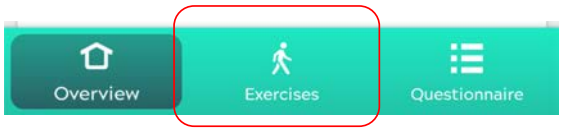
19



At the bottom of the overview screen you can find the last section.

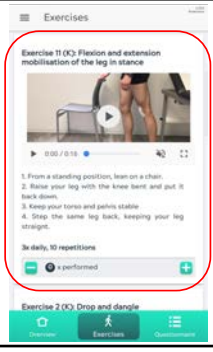
"**More information about your surgery**": opens a page with practical information helpful before and after surgery.

20



The mid tab: "**Exercises**"

21



Therapeutic exercises

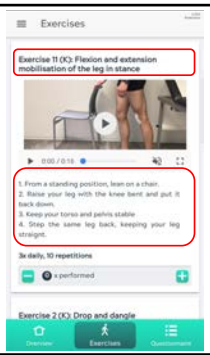
In the middle tab you will find the available exercises.

On average, there are 3 to 6 exercises active daily.

Only the exercises that need to be performed that day are shown in random order.

The exercises are adjusted according to the parameters and feedback of the patient.

22

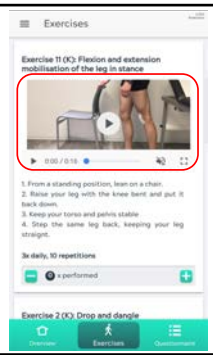


Title and instructions

The name of the exercise and detailed instructions on how to perform the exercise are available.

Additional instructions can be provided via the messaging function.

23



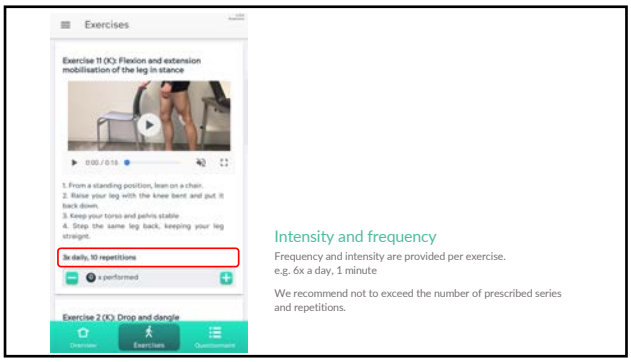
Video

There is a short video available per exercise, which shows how the exercise should be performed.

Click on the triangle ▶ to start the video.

Click on the rectangle ⛶ to see the video on a larger screen.

24

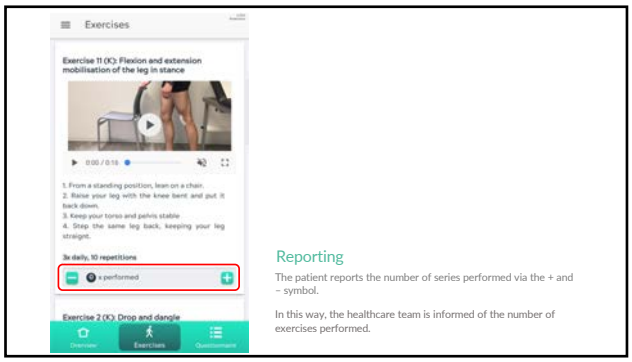


Intensity and frequency

Frequency and intensity are provided per exercise.
e.g. 6x a day, 1 minute

We recommend not to exceed the number of prescribed series and repetitions.

25

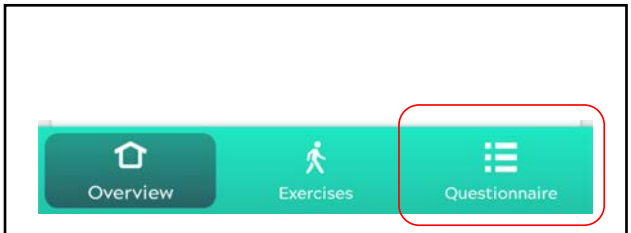


Reporting

The patient reports the number of series performed via the + and – symbol.

In this way, the healthcare team is informed of the number of exercises performed.

26



The right tab: "**Questionnaire**"

27

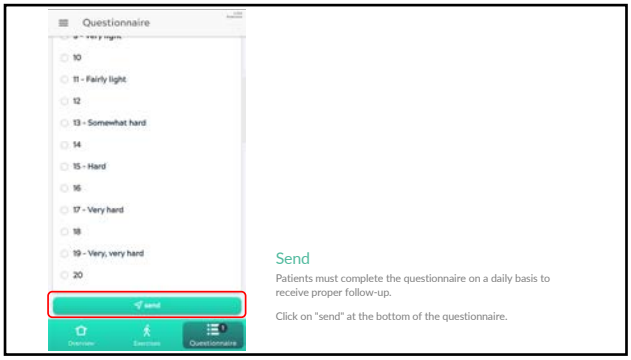
Daily questions

By completing the daily questionnaire, the healthcare team is provided with the necessary information to guide and follow up the patient in the best possible way.

The questionnaire is available between 4pm and midnight.

Completing the daily questionnaire takes about 2-3 minutes.

28

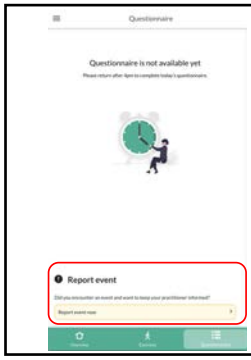


Send

Patients must complete the questionnaire on a daily basis to receive proper follow-up.

Click on "send" at the bottom of the questionnaire.

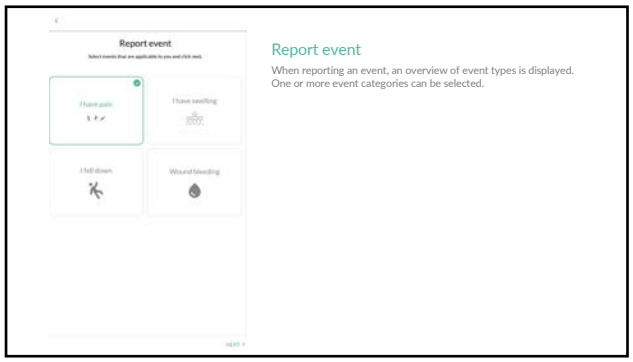
29



Report event

Events can be reported when the recurring questionnaire is not available yet or already filled out.

30



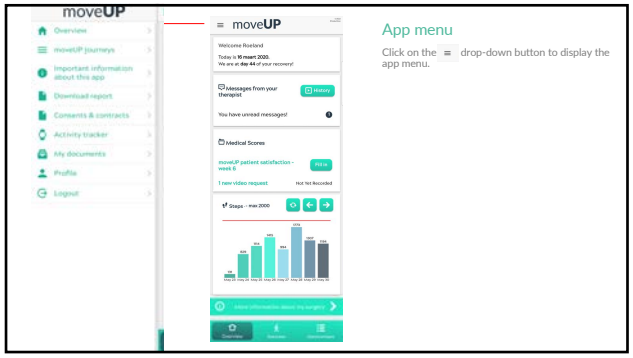
Report event

When reporting an event, an overview of event types is displayed.
One or more event categories can be selected.

31

For each selected category, a set of questions is displayed that need to be filled out.
Once all questionnaires have been answered, the given answers are sent to the practiotioner

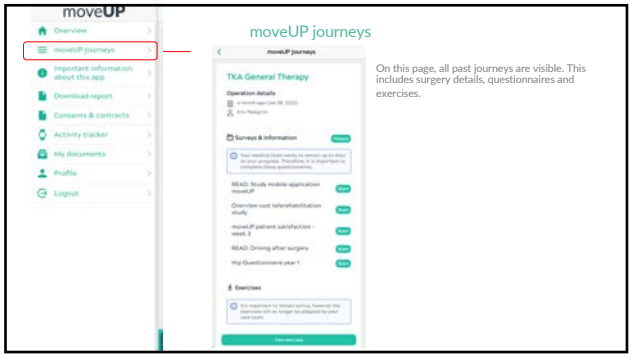
32



App menu

Click on the ≡ drop-down button to display the app menu.

33



moveUP journeys

On this page, all past journeys are visible. This includes surgery details, questionnaires and exercises.

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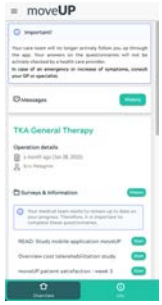
Non active-follow up



When a patient is beyond active follow up, the moveUP app will be in a "non-active follow-up mode".

In this mode, the navigation has been minimized to what the patient needs at this point with only 2 tabs: An "overview" and a new "info page" containing the frequently asked questions.

Once the active follow up for the patient has been stopped, sending chat messages will be available for one more week. The chat messages sent during this week will automatically be converted into an email to the help desk. Our help desk will answer the message in the message function. After this period, it is no longer possible to send messages, but the message history remains accessible.

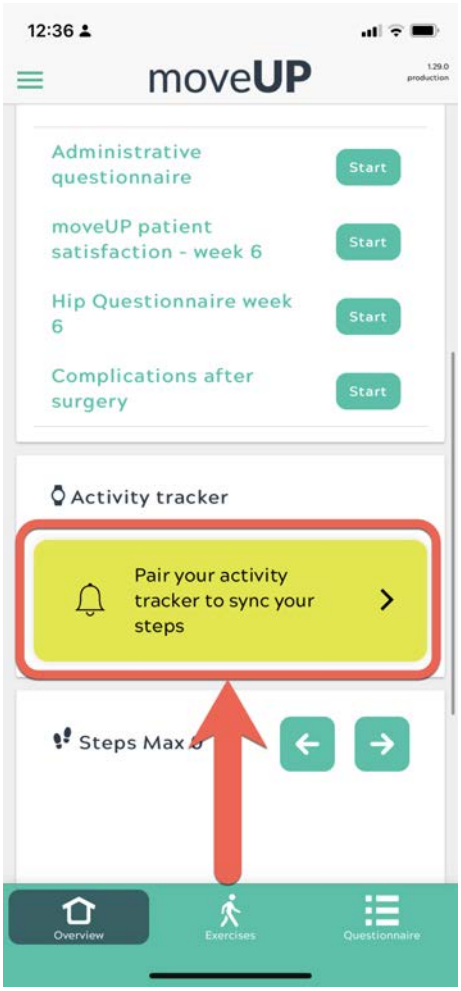
35

How to pair your Garmin Vivofit 4 & Withings go activity tracker with the moveUP app?

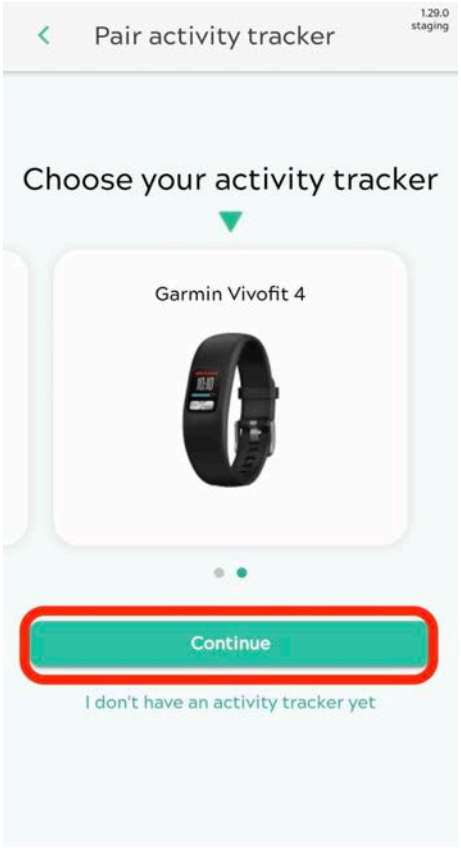
The following activity trackers are recommended by moveUP for usability and accuracy reasons. You can use any activity tracker of your choice.

Pairing the activity tracker with the moveUP app is essential to your care trajectory. The pairing only needs to be done once.

To pair your activity tracker click the green button on your homescreen.



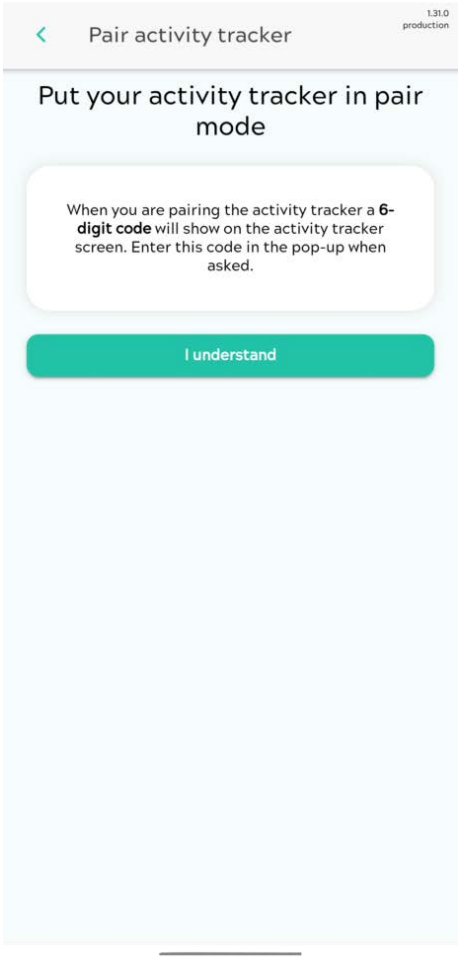
Choose “Garmin Vivofit 4” and click continue



Go through all the steps that will appear on your screen.

Be aware: when you are pairing the activity tracker a 6-digit code will show on the screen of the **activity tracker.**

On some android devices, a pop-up appears on the screen of the phone with a message the code is often 1111 or 1234. Please ignore that message. It is the **6-digit code from the activity tracker** screen you have to enter.



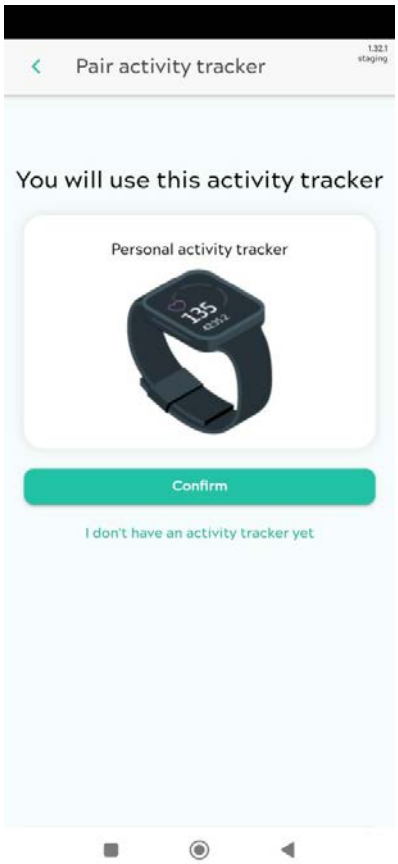
- If everything went well you will end up on this screen.
- You can click on the arrow at the left top to go back to the overview screen.

If you have problems pairing your activity tracker please send an email to support@moveup.care

Withings Go:

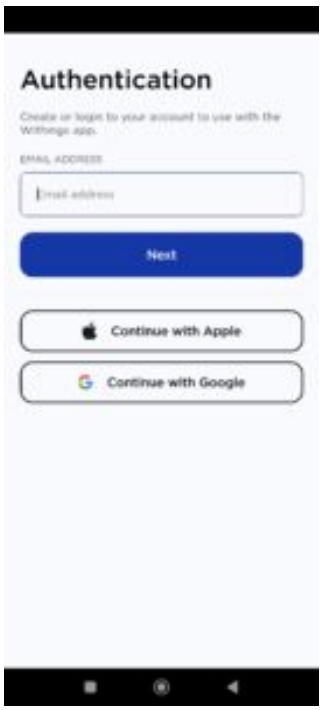
To pair your activity tracker click the green button on your homescreen.

Choose “Personal Activity tracker”

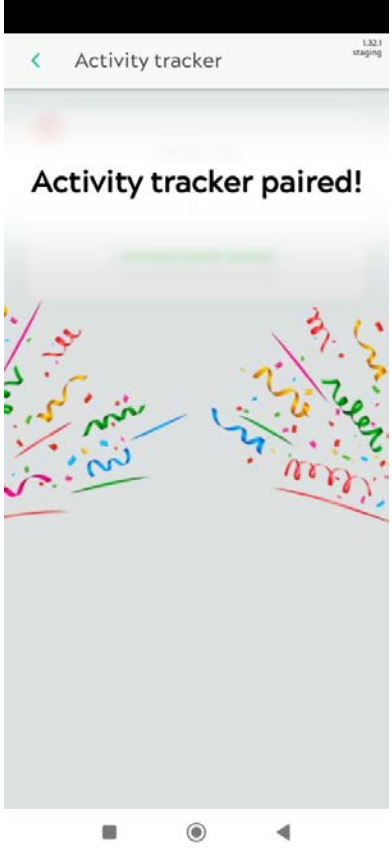


Select the Withings option

Pair the moveUP app with your Withings account. If you have any doubt you can find more info at: https://support.withings.com/hc/en-us/articles/214484018-Installing-my-Go-



Your device is paired with the moveUP app.


Activity tracker
Activity tracker paired!

[redacted]

How to synchronize my steps daily?

We advise you to wear your activity tracker around your wrist day and night. However, using during the day, is more important for us to register your activity. The activity tracker is always on and captures how active you are, hence it does not need to be activated.

You must need to manually sync your activity tracker data **daily** in the moveUP app. This way your care team can monitor how active you are and decide if any adaptations to your exercise scheme are needed.

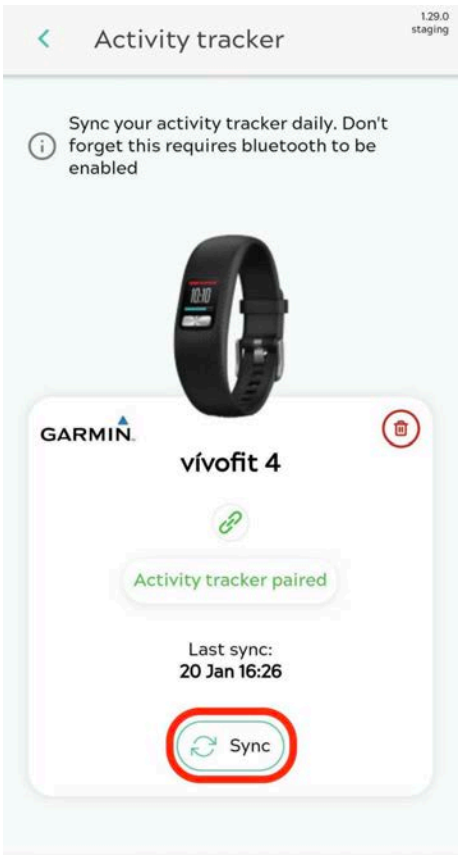
We advise syncing your steps daily in the evening.
This way your care team will see the next day how active you were.

Make sure you have at least made 100 steps with your activity tracker before you try to synchronize it.
Don't sync your steps too often during the day. Once a day after filling out the daily questionnaire is more than enough.

The activity tracker has many options in the menu, but we will not be using them. The instructions below are the only ones you will use during your recovery. At the end of the treatment, if you wish to keep the activity tracker, we will send you a full manual by email.

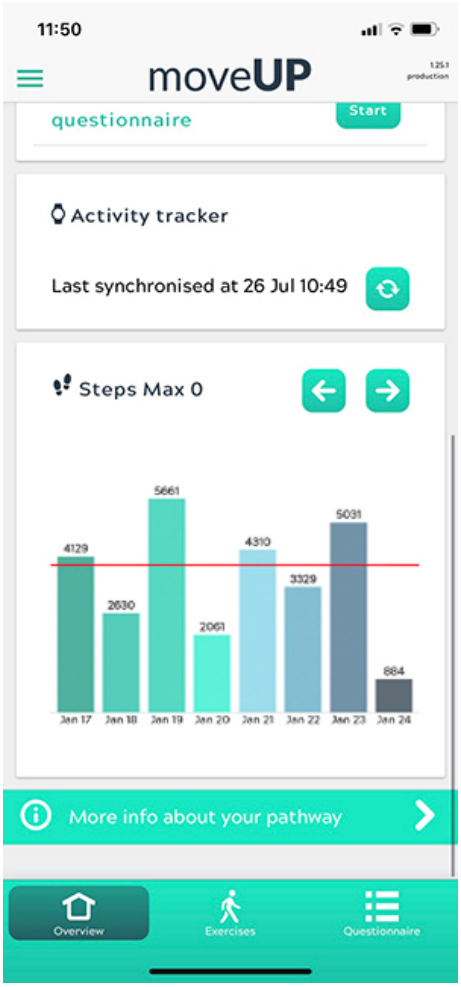
- Press the synchronizing button marked in red.

- You will see the following screen. Click on “Sync”



- Follow the instructions on the screen. Basically you have to press the silver button on your activity tracker twice for 2 seconds.
- At the end you will automatically be taken back to the homescreen and your steps will be visible in the graph.

- You will see the synced steps data appear on the graph on your home screen.



If you have problems synchronizing please send an email to support@moveup.care and try to describe exactly in which step you encounter problems and what messages you see or get on your screen.

[redacted]

moveUP

Healthcare Platform

CE

moveUP

1

Functionalities
Healthcare Platform

2

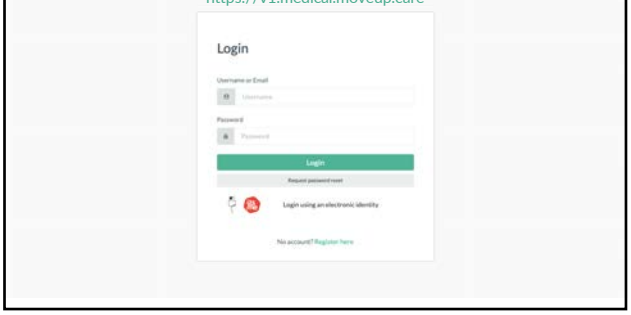
- ✓ Healthcare platform

3

moveUP

Trained physical therapists and doctors login to the Healthcare Platform

https://v1.medical.moveup.care



4

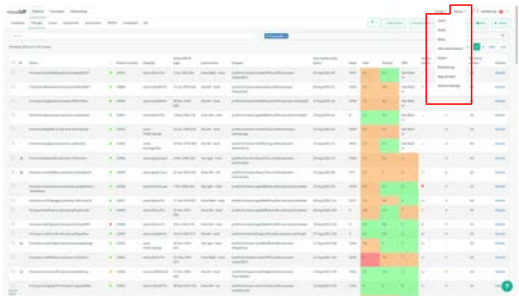
Patient overview

5

The moveUP platform gives you a clear overview of your patients

6

User management

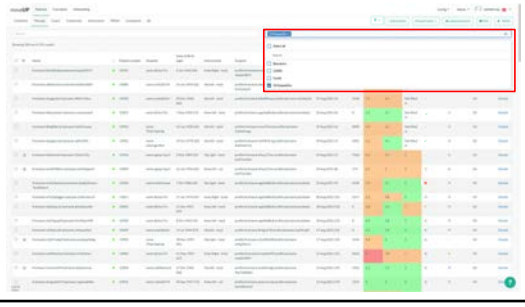


7

Log out

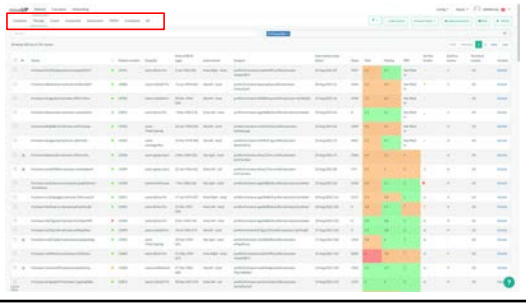
8

Select patients related to a specific pathology by using tags



9

Click to navigate between: 'Candidate, Therapy, Coach, Companion, PROM, Completed or All' patients



10

Candidate | Therapy | Coach | Companion | PROM | Completed | All

Candidates
Patients who are awaiting a care plan. They downloaded the moveUP app and registered or are created by a hcp.

Therapy
Patients with an active Therapy care plan before or after surgery.

Coach
Patients with an active Coach care plan before or after surgery.

Companion
Patients with an active Companion care plan before or after surgery.

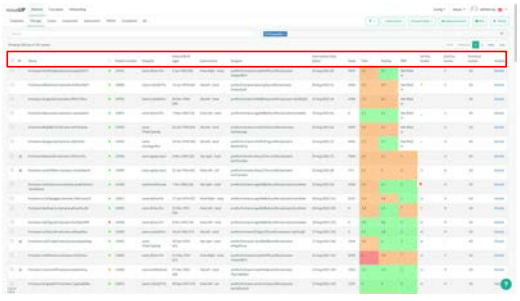
PROM
Patients who will still receive medical questionnaires for long term follow up on specific timepoints (e.g. 3m – 6m , ...).

Completed
Patients who have completed their long term follow up.

All
All patients.

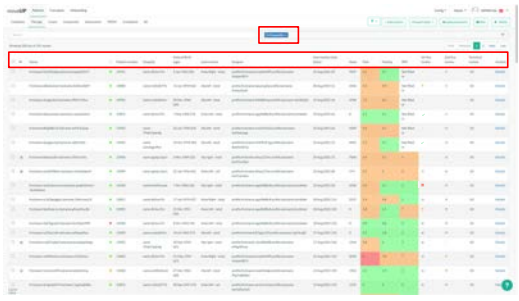
11

Different categories are displayed in the top bar.
Click to sort



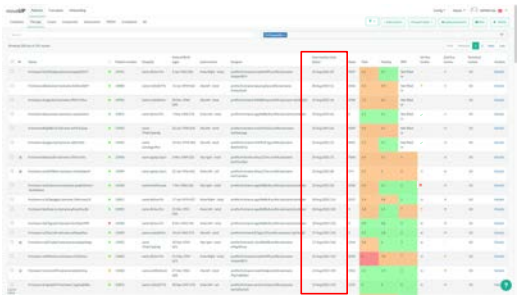
12

The tag defines the categories in the top bar



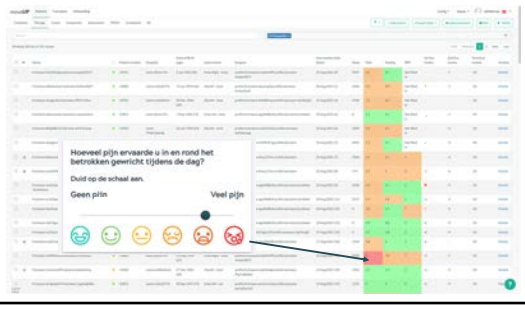
13

By default, when opening the healthcare platform, the intervention date is sorted



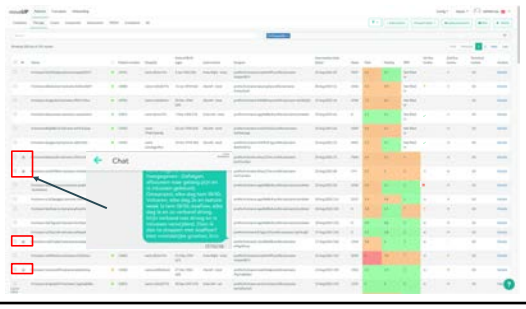
14

Color codes and notifications indicate patients who need closer attention



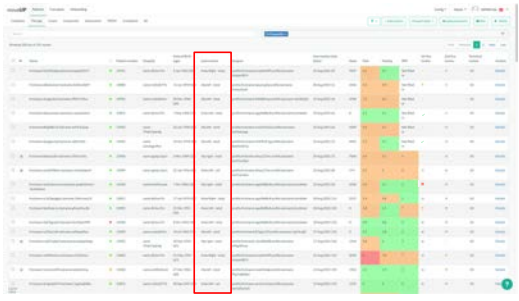
15

Unread messages are displayed



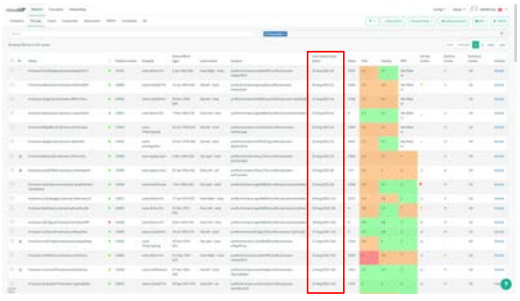
16

See which intervention the patient is being treated for



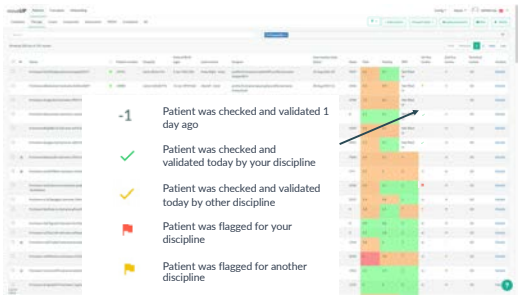
17

Visualize when the patient was operated



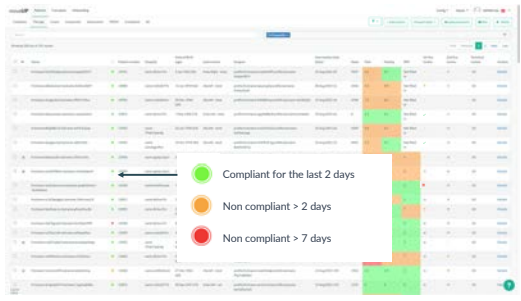
18

First line review



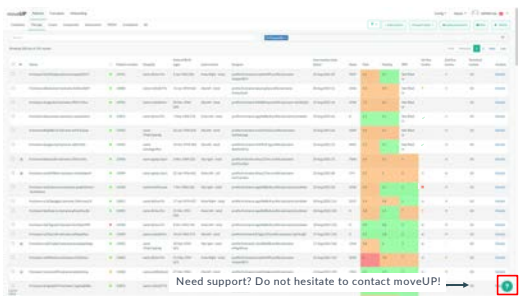
19

Patient compliance is visualized in the patient overview



20

Contact – support@moveup.care

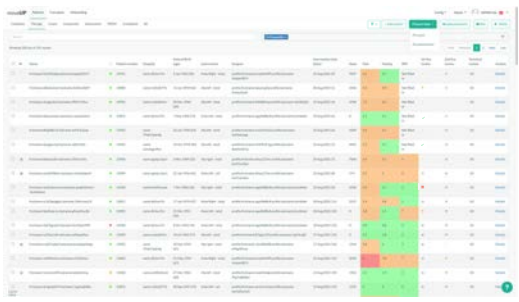


21

- Activated can mean 2 things: either the patient registered him/herself with a code through the app or he has been marked as immediately activated in onboarding.
- Non activated: patients who haven't registered themselves through the app yet and haven't been marked as immediately activated.

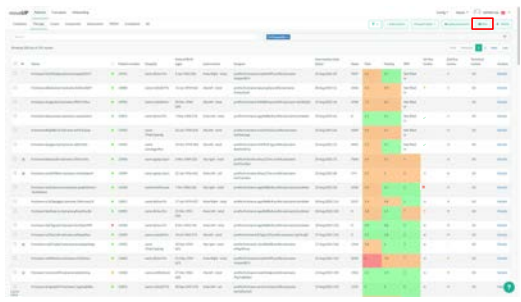
22

Data can be extracted by exporting to a csv file



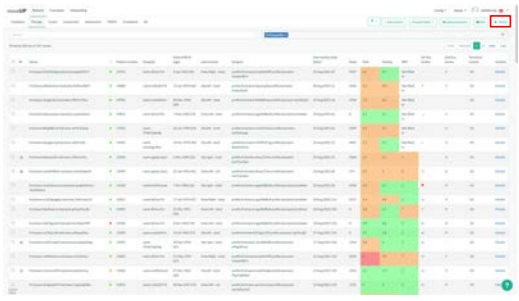
23

Mail templates can be sent via email



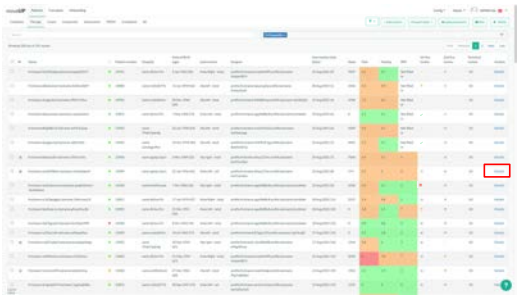
24

Notifications can be sent directly to the patient's device home screen



25

Patient 13899 was operated 8 days ago
Let's see how this patient is doing

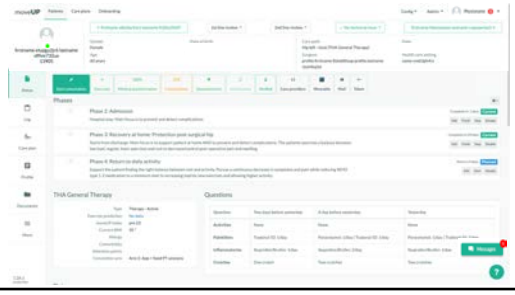


26

Patient details

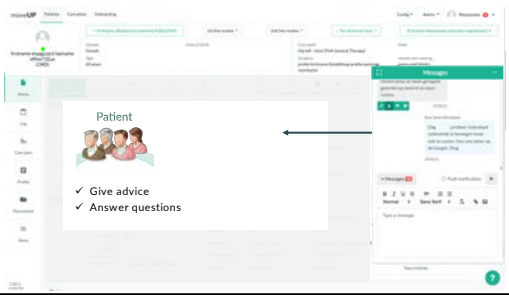
27

Patient details



28

Patient details – Messaging function

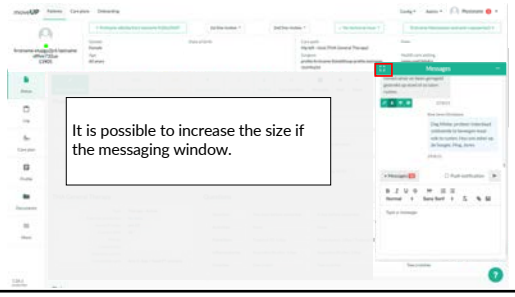


29

Patient details – Messaging function

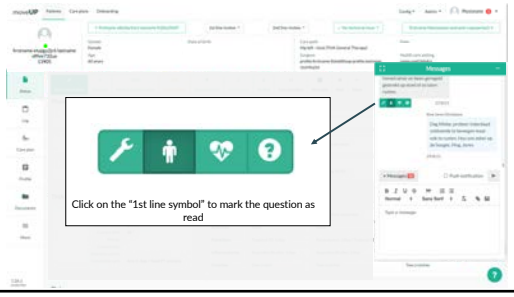
30

Patient details – Messaging function



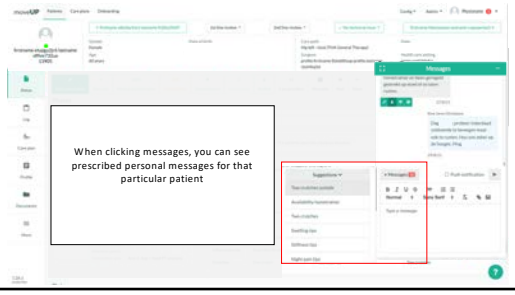
31

Patient details – Messaging function



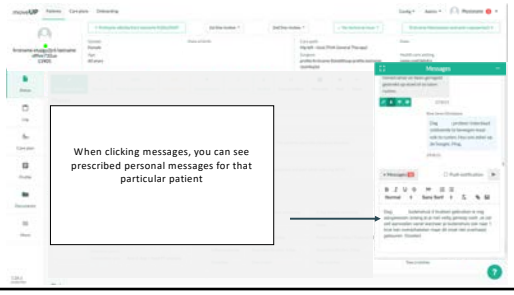
32

Patient details – Messaging function



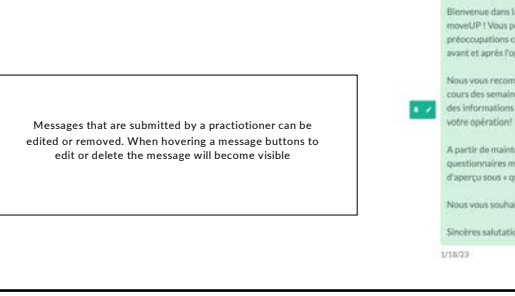
33

Patient details – Messaging function



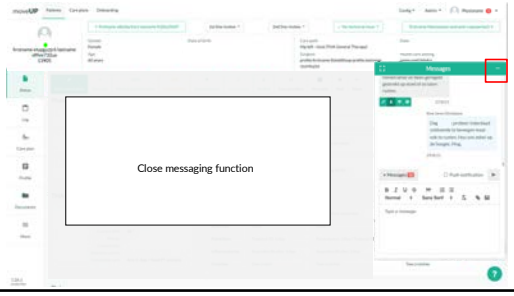
34

Patient details – Messaging function



35

Patient details – Messaging function



36

Patient details - Navigation

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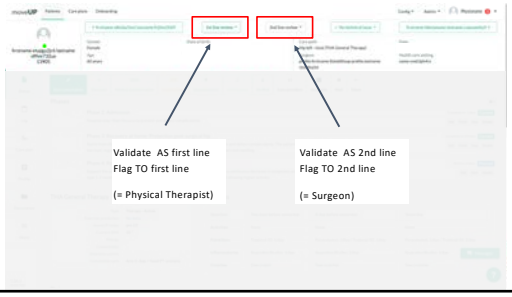
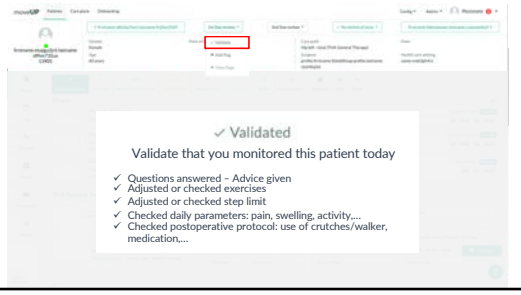
Patient details - Navigation



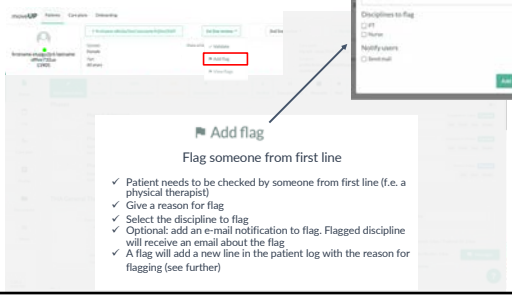
38

Patient details - Navigation



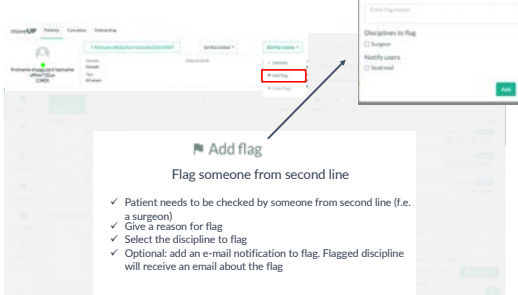
39

Patient details - Navigation



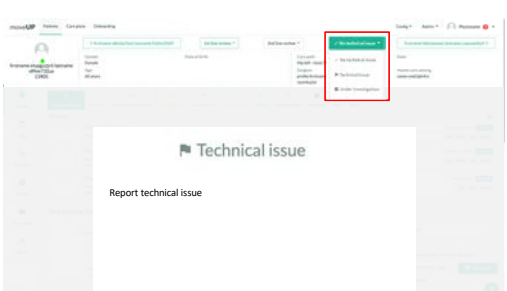
40

Patient details - Navigation



41

Patient details - Navigation

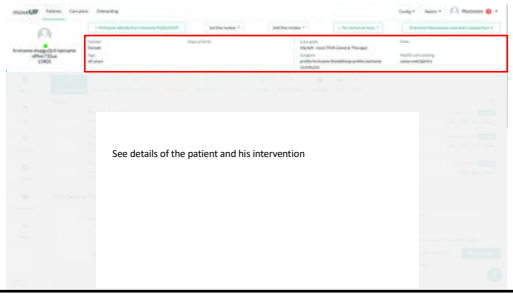


42

Patient details
-
Status

43

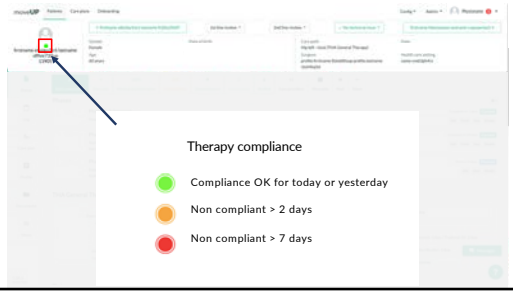
Patient details - Status



See details of the patient and his intervention

44

Patient details - Status

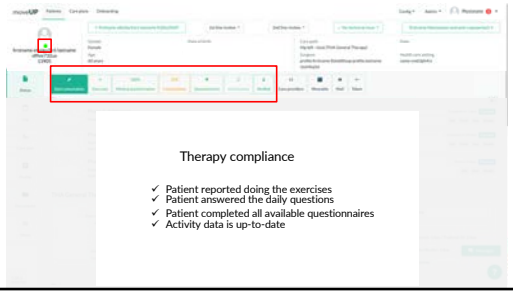


Therapy compliance

- Compliance OK for today or yesterday
- Non compliant > 2 days
- Non compliant > 7 days

45

Patient details - Status



Therapy compliance

- ✓ Patient reported doing the exercises
- ✓ Patient answered the daily questions
- ✓ Patient completed all available questionnaires
- ✓ Activity data is up-to-date

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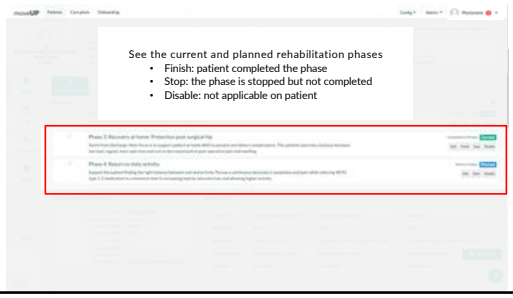
Patient details - Status



See the current and planned rehabilitation phases

- Finish: patient completed the phase
- Stop: the phase is stopped but not completed
- Disable: not applicable on patient

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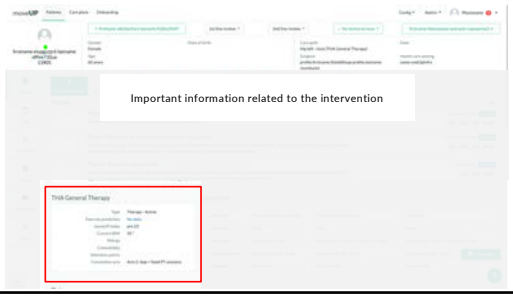
Patient details - Status



Important information related to the intervention

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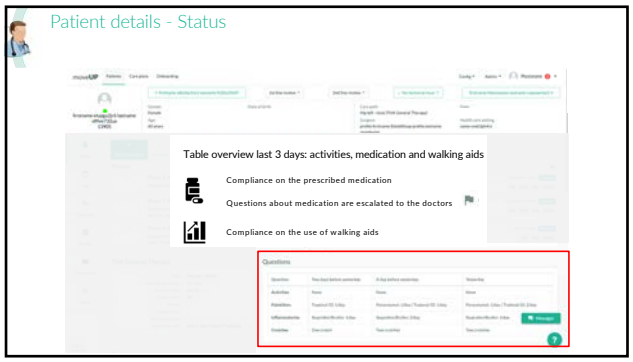
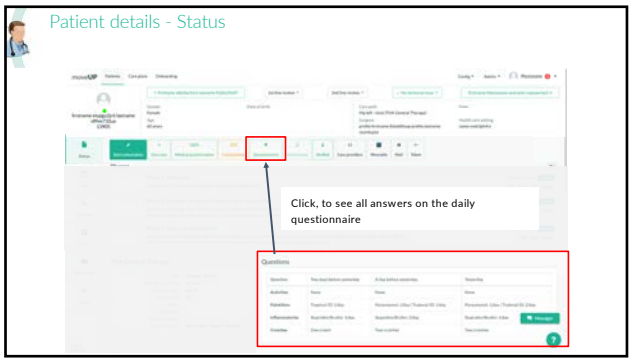
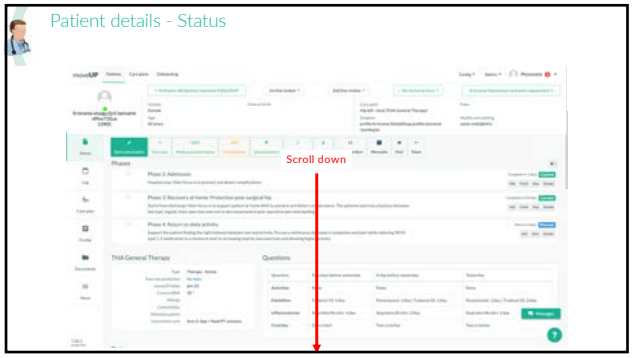


49



50



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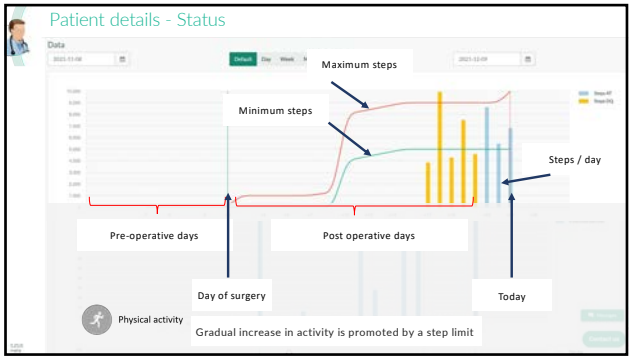
52

53



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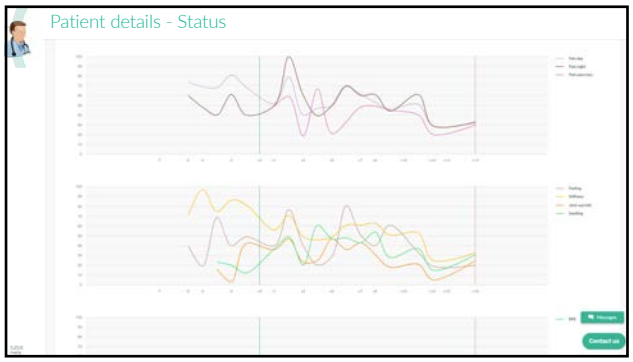

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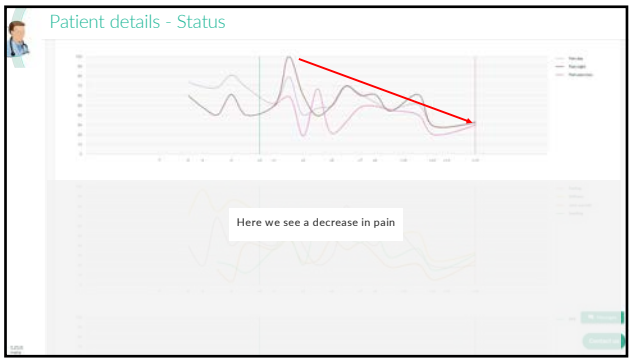

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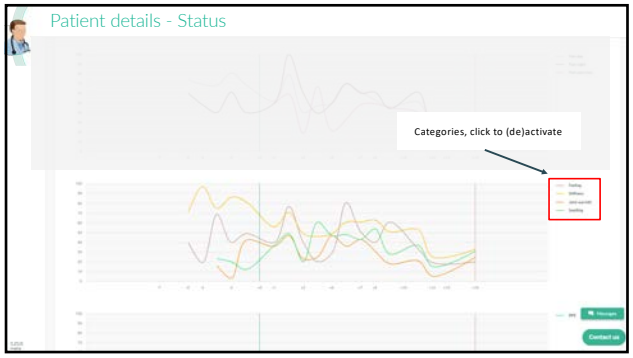

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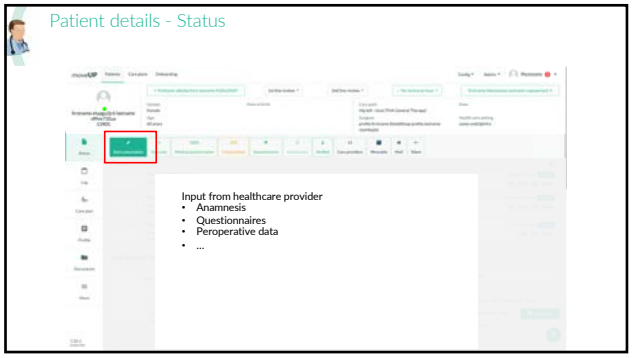

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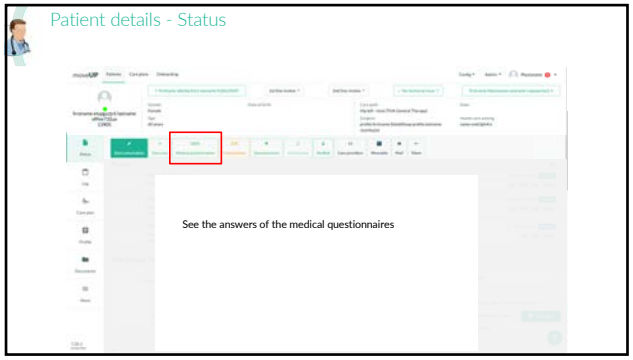

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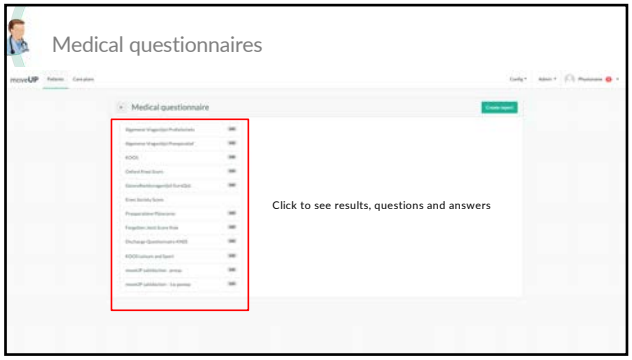

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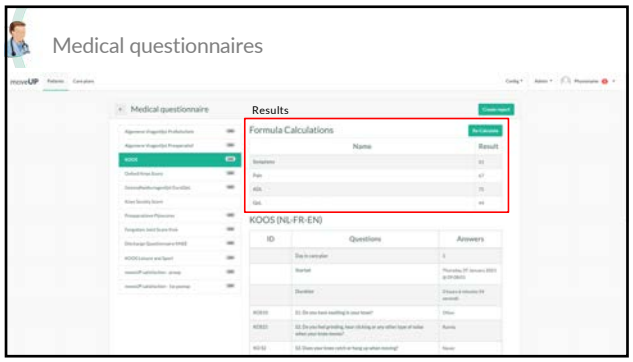

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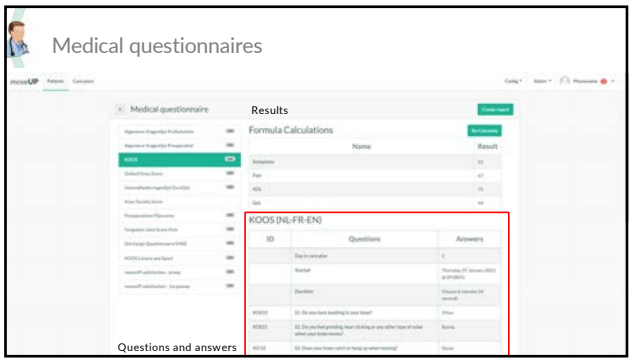

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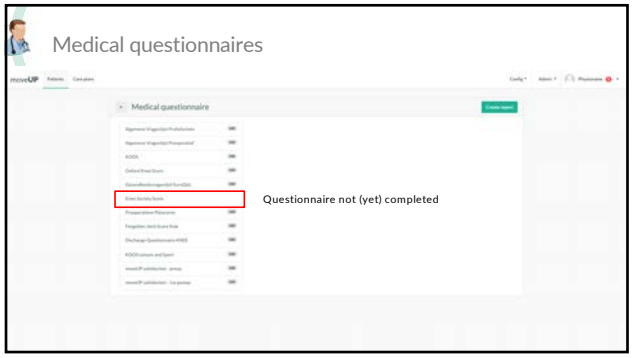

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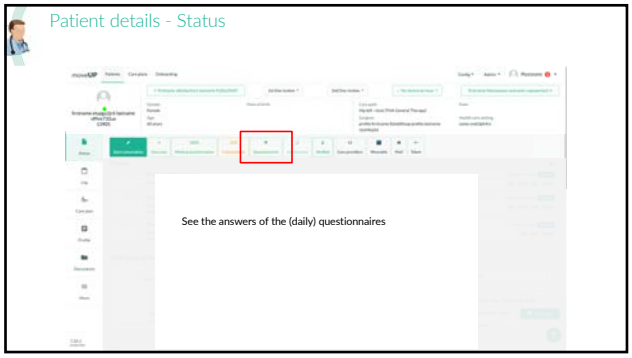

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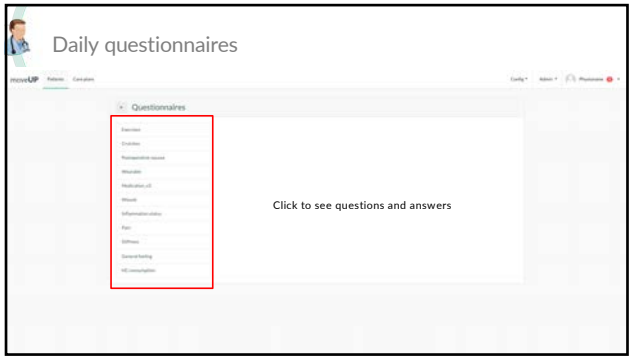

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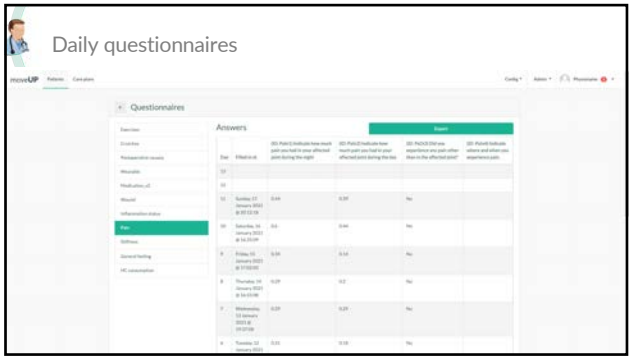
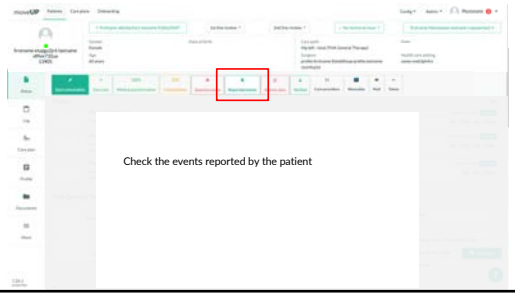


66

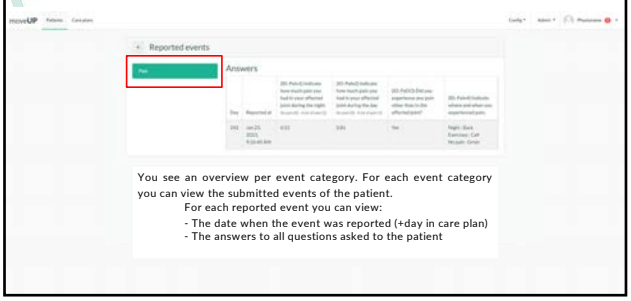
Patient details - Status



Check the events reported by the patient

67

Reported events



You see an overview per event category. For each event category you can view the submitted events of the patient.

For each reported event you can view:

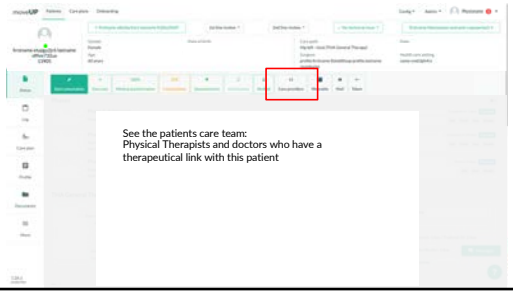
- The date when the event was reported (+day in care plan)
- The answers to all questions asked to the patient

68

When a patient reports an event, a log entry is also added to the patients log indicating that an event has been submitted by the patient. (see further in 'log')

69

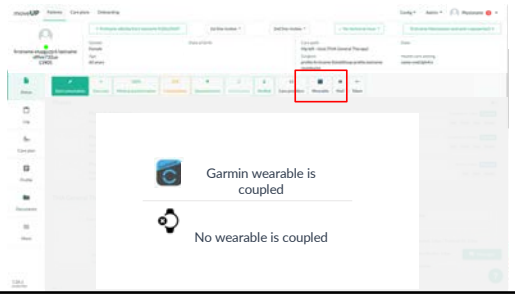
Patient details - Status



See the patients care team:
Physical Therapists and doctors who have a therapeutical link with this patient

70

Patient details - Status

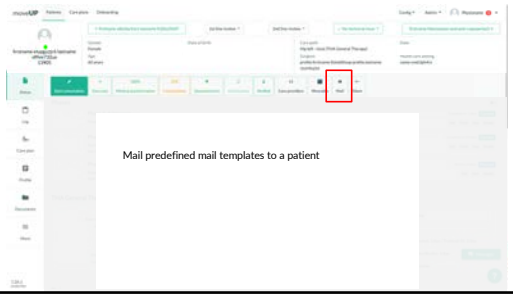


Garmin wearable is coupled

No wearable is coupled

71

Patient details - Status



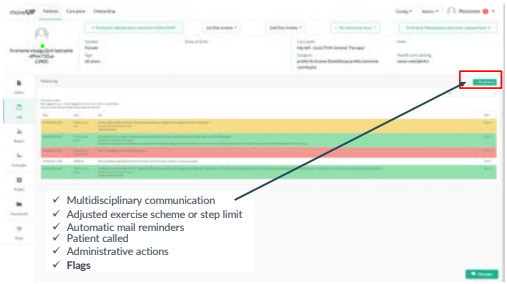
Mail predefined mail templates to a patient

72

Patient details
-
Log

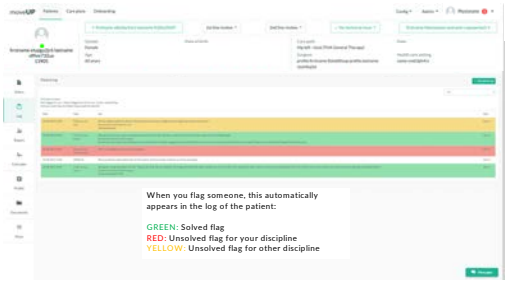
73

Patient details- Log



74

Patient details - Log



75

Patient details
-
Report

76

Patient details Report

This is a patient/medical professional report used to inform the main milestones and medical scores of the patient, as well as the evolution of the patient during their treatment with moveUP.

77

The report can be downloaded in pdf form by clicking the "Download report" button. This way you can send the report to the patient.

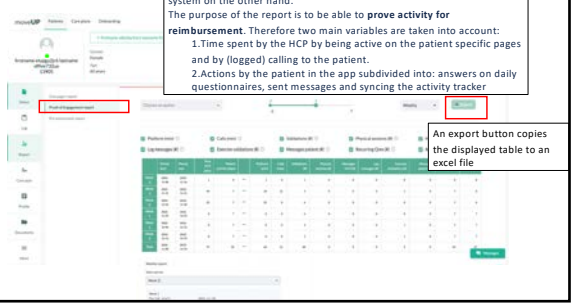
It's also possible to share the link directly to the report, using the button "Copy report link".

78

Patient details Report

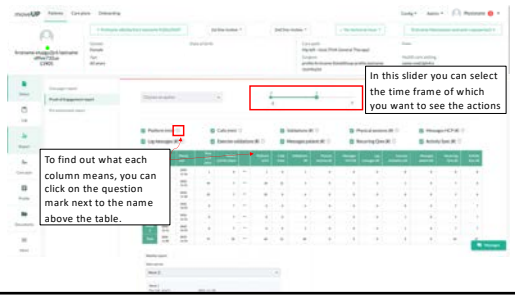
The proof of Engagement report gathers the dedication of the care team to the patient on the one hand and the adherence of the patient to the system on the other hand.
The purpose of the report is to be able to **prove activity for reimbursement**. Therefore two main variables are taken into account:

1. Time spent by the HCP by being active on the patient specific pages and by (logged) calling to the patient.
2. Actions by the patient in the app subdivided into: answers on daily questionnaires, sent messages and syncing the activity tracker



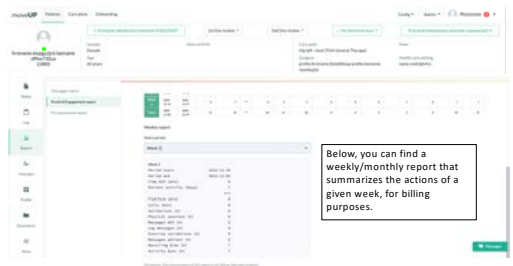
79

Patient details Proof of engagement report



80

Patient details Proof of engagement report

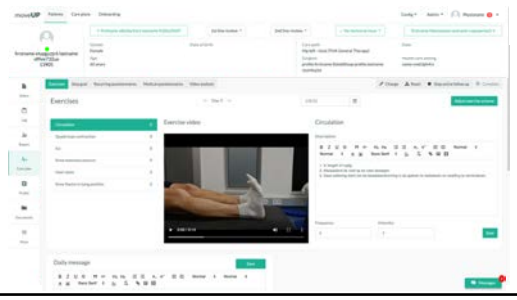


81

Patient details
-
Careplan
patient's adapted treatment

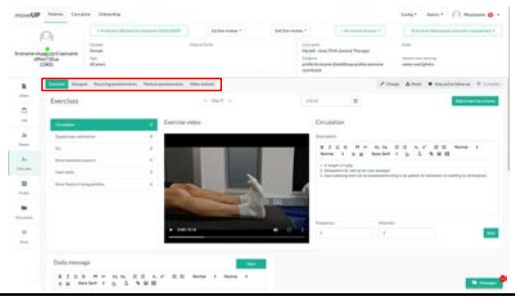
82

Patient details – Care plan Exercises



83

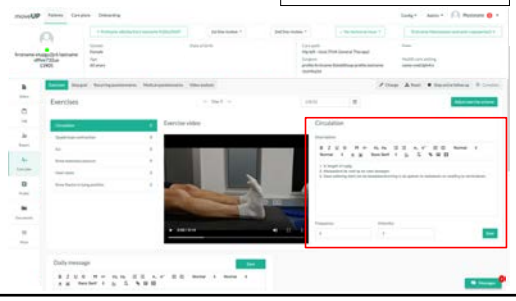
Patient details – Care plan Exercises



84

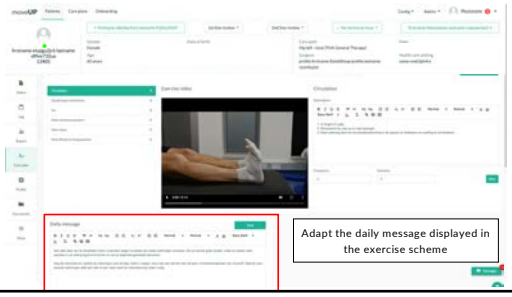
Patient details – Care plan Exercises

See the exercises for today
Adapt description, frequency and intensity



85

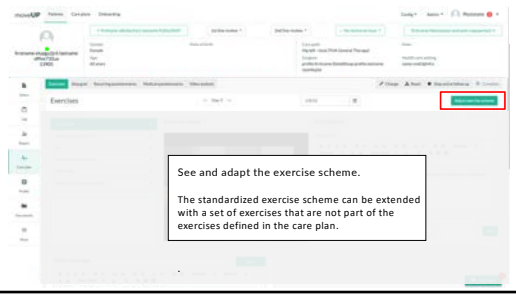
Patient details – Care plan Exercises



Adapt the daily message displayed in the exercise scheme

86

Patient details – Care plan Exercises



See and adapt the exercise scheme.

The standardized exercise scheme can be extended with a set of exercises that are not part of the exercises defined in the care plan.

87

Patient details – Care plan

A standardized exercise scheme is personalized based on the patient's need

Blue check marks means that the exercise has been activated

Gray check marks means that the exercise has not been activated

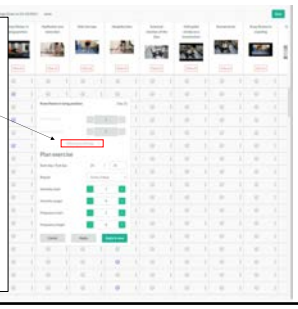
88

Patient details – Care plan

A standardized exercise scheme is personalized based on the patient's need

There is a planning feature to schedule exercises over a longer period of time
(click on *Advanced settings*)

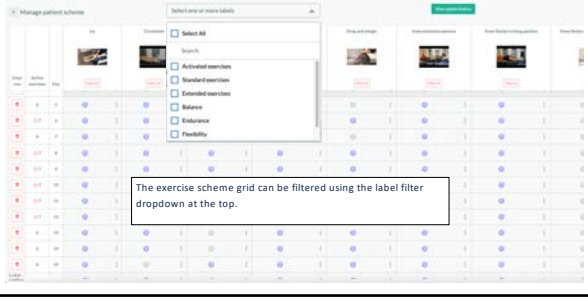
- Start day/End day:
  - Start day = the day of the cell you clicked on
  - End day= Fill in the day you want this exercise to end
- Repeat input field:
  - Choose how the exercise will repeat till the end day
- Intensity/ Frequency START:
  - This is the value where the patient will start on
- Intensity/Frequency TARGET:
  - This is the value where the patient will end on.
    E.g. Start day=10, End day=20, Intensity start= 1, Intensity target=10 => On day 15 the intensity will be automatically calculated and ,in this case, will be set to 5.



89

Patient details – Care plan

A standardized exercise scheme is personalized based on the patient's need

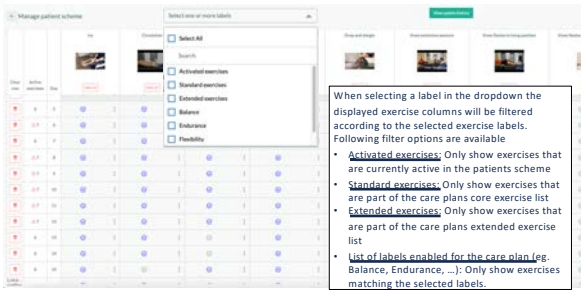


The exercise scheme grid can be filtered using the label filter dropdown at the top.

90

Patient details – Care plan

A standardized exercise scheme is personalized based on the patient's need

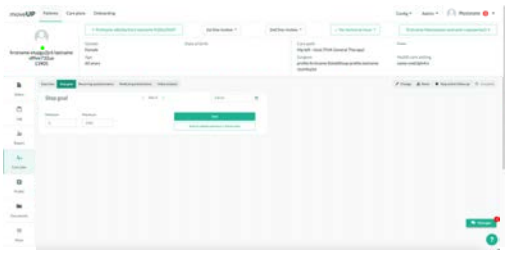


When selecting a label in the dropdown the displayed exercise columns will be filtered according to the selected exercise labels. Following filter options are available

- Activated exercises: Only show exercises that are currently active in the patients scheme
- Standard exercises: Only show exercises that are part of the care plans core exercise list
- Extended exercises: Only show exercises that are part of the care plans extended exercise list
- List of labels enabled for the care plan (eg. Balance, Endurance, ...): Only show exercises matching the selected labels.

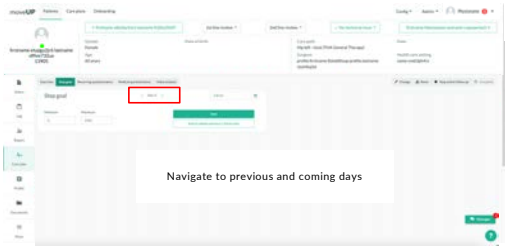
91

Patient details – Care plan Step goal



92

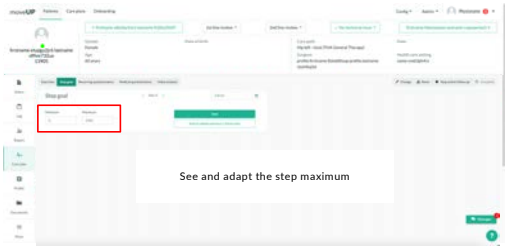
Patient details – Care plan Step goal



Navigate to previous and coming days

93

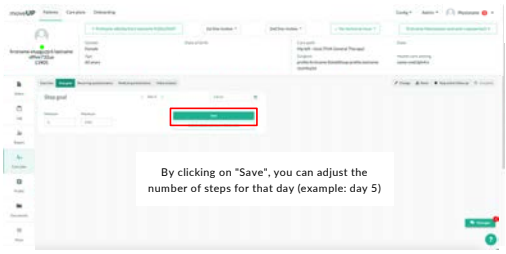
Patient details – Care plan Step goal



See and adapt the step maximum

94

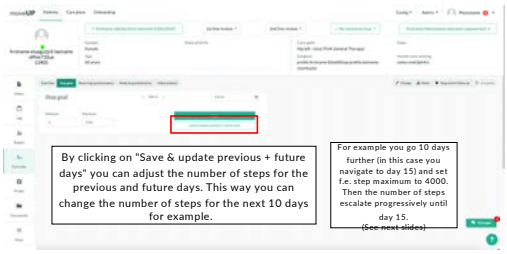
Patient details – Care plan Step goal



By clicking on "Save", you can adjust the number of steps for that day (example: day 5)

95

Patient details – Care plan step goal

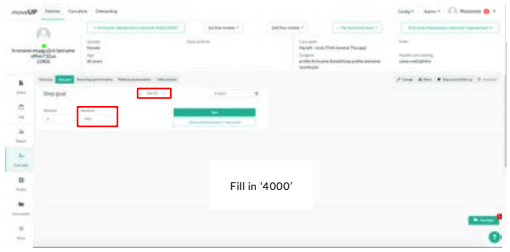


By clicking on "Save & update previous + future days" you can adjust the number of steps for the previous and future days. This way you can change the number of steps for the next 10 days for example.

For example you go 10 days further (in this case you navigate to day 15) and set f.e. step maximum to 4000. Then the number of steps escalate progressively until day 15.
(See next slides)

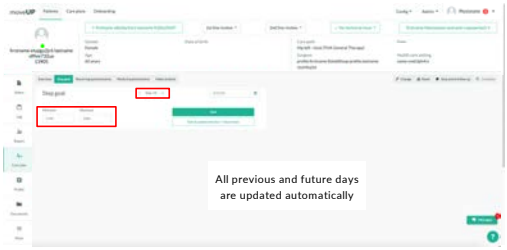
96

Patient details – Care plan Step goal



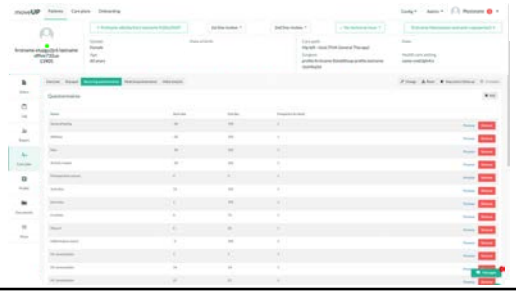
97

Patient details – Care plan Step goal



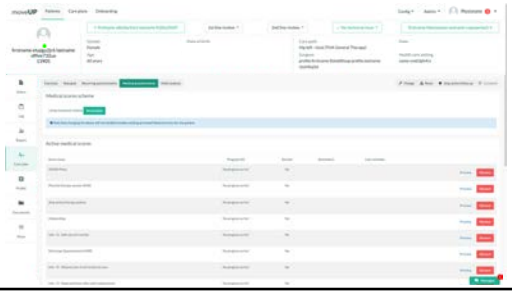
98

Patient details – Care plan Recurring questionnaire

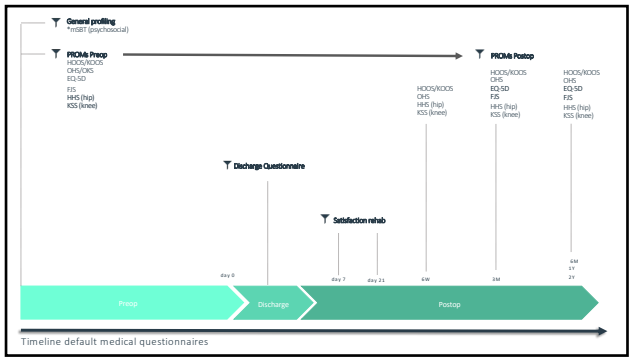


99

Patient details – Care plan Medical questionnaire

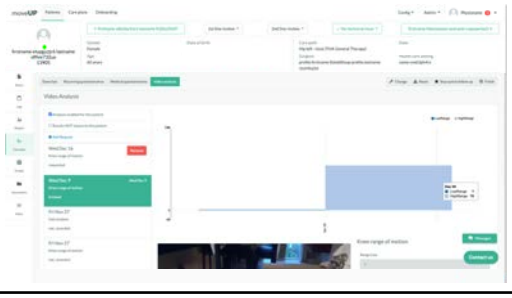


100



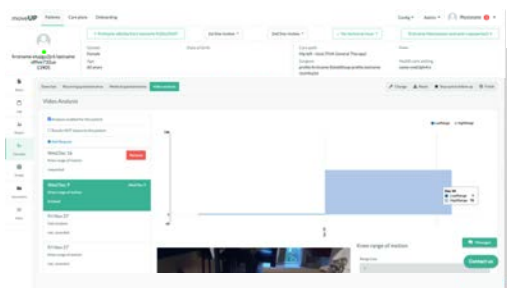
101

Patient details – Care plan Video analysis



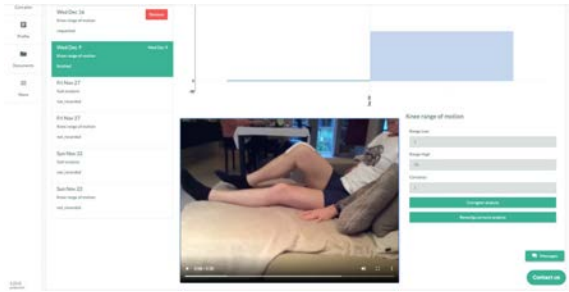
102

Patient details – Care plan Video analysis

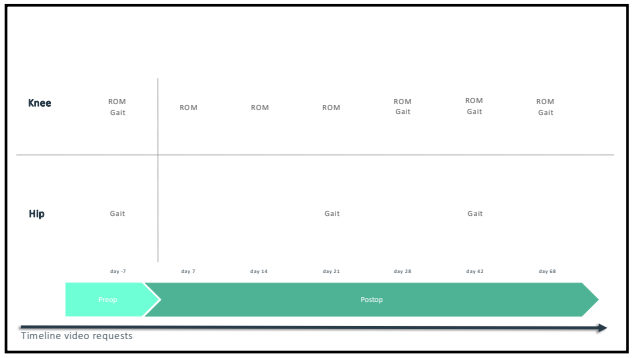


103

Patient details – Care plan - Video analysis



104



105

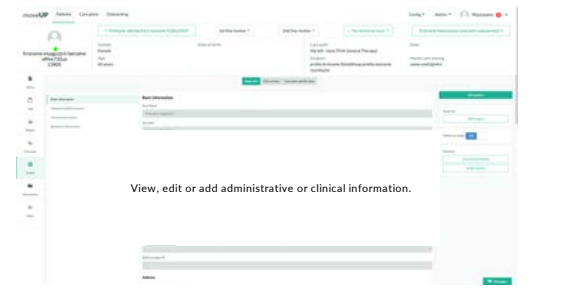
Patient details - Profile

106

Patient details - Profile

107

Patient details - Profile



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Patient details
-
Documents

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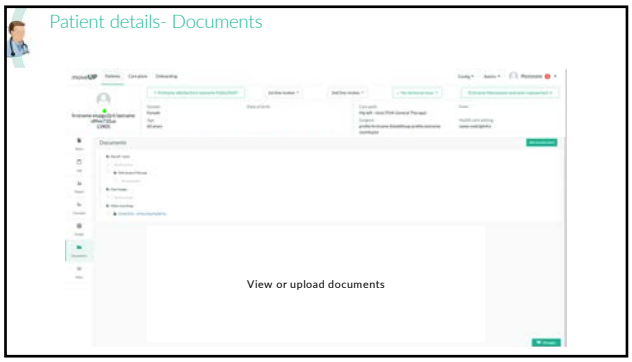

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Patient details
-
More

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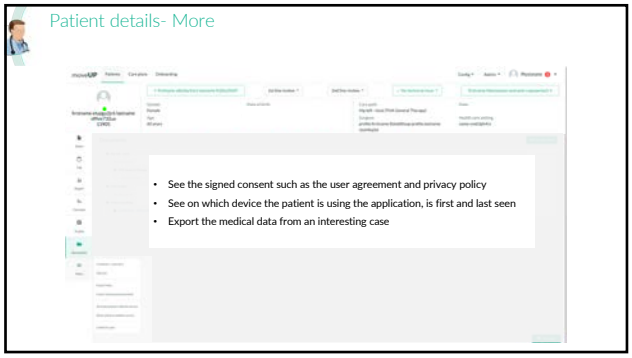

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1

CLINICAL GUIDELINES FOR PHYSICAL THERAPISTS

Digital rehabilitation pathway for knee and hip arthroplasty patients

2

Daily therapy by certified Physical Therapists

3

The following document is a clinical guideline for physical therapists to get familiar with digital rehabilitation of patients following knee- and hip arthroplasty.

With moveUP, we put forward pain free exercises and symptom-based progressive increase of daily activities during the whole rehabilitation track with the aim to prevent chronic pain, complications and to achieve the best possible outcome. Different rehabilitation phases are structurally presented within the table below. Next to the representation of the phases, you will also find back recommended exercises and other contributing factors in more detailed tables. Some guidelines can be surgeon and/or hospital specific.

Table phases

Phase
Estimated time
Events
Goal
Actions (See tables)
Criteria -> next phase

The end criteria indicate when the next phase can start.

Take into account that the phases are not absolute, which means there can be overlap and/or end criteria are not fully achieved.

4

Using a digital pathway, moveUP captures relevant information with the aim to improve data driven, evidence-based rehabilitation and outcome. Currently, moveUP captures over 400 datapoints per patient. This data collection results in both long-term as short-term (direct) gains in protocol development and patient pathway optimization.

Long-term gains/benefit of digital monitoring

= continuous improvement of protocols via big data analysis(e.g. nearest neighbor)

Long-term gains will improve quality of care when the information is captured and thoroughly analyzed for thousands and thousands of patients. This will lead to new benchmarking values. In some cases, they can also contribute on short term.

Patient moveUP population Nearest neighbour

Direct gains/benefit of digital monitoring

= optimizing of standard of care

One of the direct gains of digital monitoring and care are the possibilities in objectifying and visualizing information and data that is missing in the standard of care.

New clinical data points can improve your quality of care the moment you make use of them, the moment you start taking them into account.

In a previous module, you learned how the numerous datapoints are captured and how to retrieve it in the health care platform. In this module, you will go deeper on the clinical recommendations that comes with moveUP's digital rehabilitation.

Before we start, here is a short recap on what is precisely meant with the direct gains:

5

Direct gain – e.g. visualization of patient reported pain levels

- Pain before surgery?
- How does the pain evolve by adding a new exercise?
- How does the pain evolve by stopping a certain painkiller?

6

Direct gain – e.g. visualization of patient reported parameters: Joint warmth, swelling

- Patient's reported warmth and swelling of the operated joint can provide usefull insights on the healing proces.
- See below a decrease in patient's reported swelling (green).

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Direct gain - e.g. insight in patient's activity captured by a wrist worn activity tracker

Insight in preoperative activity levels

Insight in postoperative activity levels
- Which activity level does the patient reach
- Does the patient gradually increase activity?
- Does the patient follow the advised step maximum?
- ...

Physical activity

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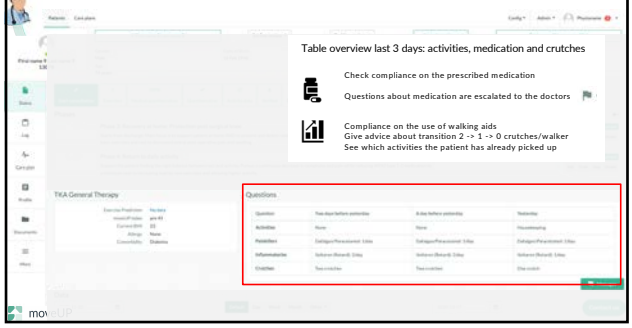
Direct gain – e.g. consider daily reported activities, medication-intake and crutches



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Escalation to 2nd line doctors

- Picture of wound
- Alarming or atypical parameters
- High pain levels and possibility to adapt medication
- Non compliance of medication intake
- Question about medication
- Extra motivation
- ...

Flag is automatically reported in patients log:

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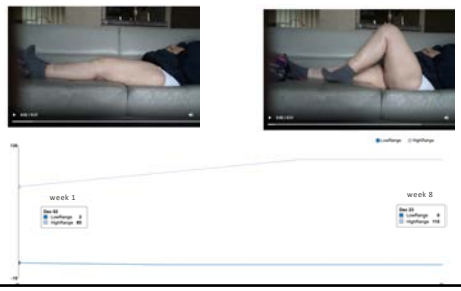
Direct gain – Track your patient's range of motion over time



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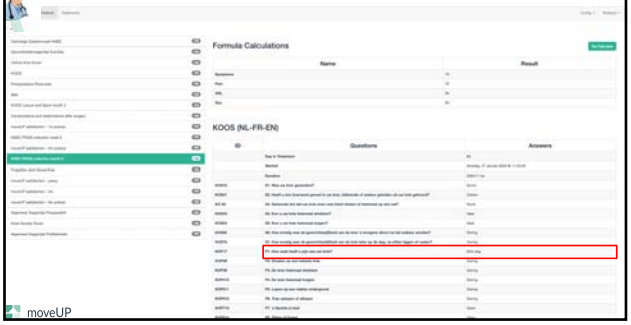
Direct gain – Evaluate specific PROMs answers



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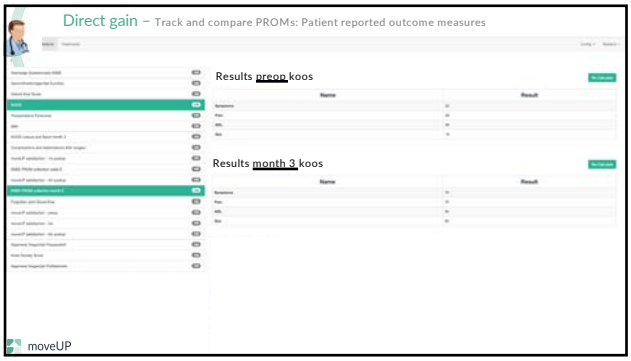
Direct gain – Track and compare PROMs: Patient reported outcome measures



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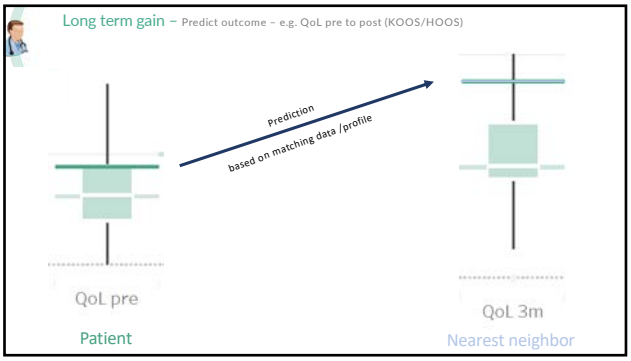
Long term gain – Predict outcome – e.g. QoL pre to post (KOOS/HOOS)



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Knee arthroplasty

Total knee replacement
Uni knee replacement

15

	Preparation	Hospitalization Protection post-surgical knee	Return to daily activity	Return to active lifestyle
Estimated time		Day 0 - 21	Day 7 - 60	Day 35 - ...
Events		Surgery Hospital stay Discharge First week home Removal of staples	First postoperative consult Week 6 PROMs evaluation	Second postoperative consult Month 3 PROMs evaluation Back to work Driving car
Goal		Protection post-surgical knee Prevent complications Pain & symptoms control Regain proprioception Knee movement within pain limits	Gradually decrease in pain <2/10 Gradual stop of medication Gain in pain free basic strength ROM 0-90° week 4 Normalized gait pattern **Basic balance** / coordination	ROM 0 - 110° week 8 Reach full ROM 0 crutches/walker device Regain functional strength
Actions (See tables)		Educate & support patient Supervised use of crutches/walker Supervise medication intake Provide pain free exercises Control activity level Check wound Check mobility	Educate & support patient Support transfer 2 crutches -> 1/0 crutches Adapt exercise scheme Ask pictures of swelling/wound Add non default exercises	Adapt exercise scheme Reassure normal progression Add non default exercises Finalize rehabilitation
Criteria -> next phase		Protection & education Pain & symptom control	A minimum of / no pain A minimum feeling of warmth of the knee Painkilling medication stopped or limited to occasional intake of WHO type 1 medication No more NSAIDs	**For some /a/ or exercises surgeon approval is advised e.g. driving, biking, lunges,..**

Phases knee

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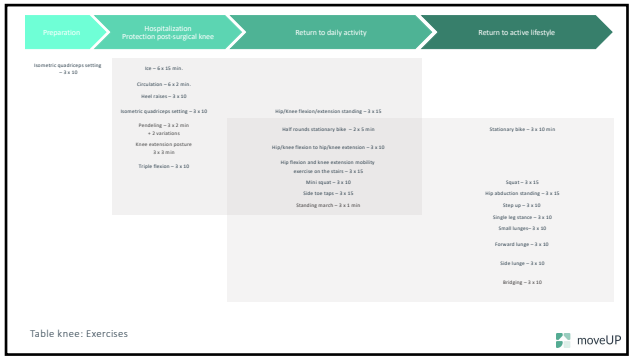

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	Preparation	Hospitalization Protection post-surgical knee	Return to daily activity	Return to active lifestyle
Activity		1. Preop avg < 4000: • Max steps 1000/day 2.Preop avg 4000 – 9000: Max steps 1500/day 3. Preop avg > 9000: • Max steps 2000/day From day 5: + 100 steps/day	Gradual increase until 50-100% preop steps Positive evolution: +100-200 steps / day Negative evolution: a. Max steps on hold b. Decrease in Max steps	Gradual increase until 75% - 100% or > preop steps Positive evolution: +100-200 steps / day Negative evolution: a. Max steps on hold b. Decrease in Max steps
Medication		PK: WHO 1 – 2 NSAID 2/day – 2 weeks Blood thinning medication	PK WHO 1 NSAID 1/day – 2 weeks	Stop PK No NSAID
Mobility		Pain free mobility exercises without forcing	ROM 0°- 90° week 4 Focus on full extension	ROM 0 – 130° week 8 Full ROM
Crutches		2 crutches	2 or 1 crutch	No crutches
Stationary bike		No bike	Stationary bike no resistance	Stationary bike with resistance
Biking			No biking	Biking after surgeon approval
Car			Driving (when feeling safe to do so) *Check the need for surgeon or car insurance approval	

Table knee: Activity – Medication (see addendum) – ROM - ...

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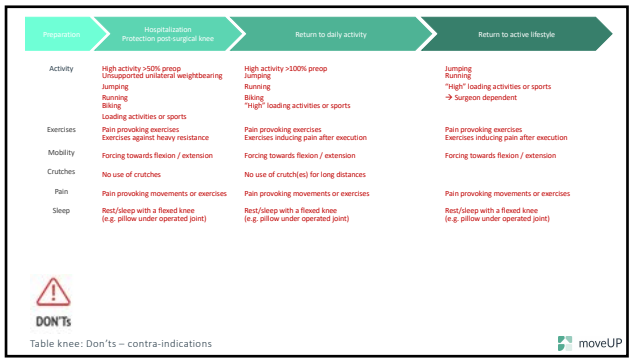

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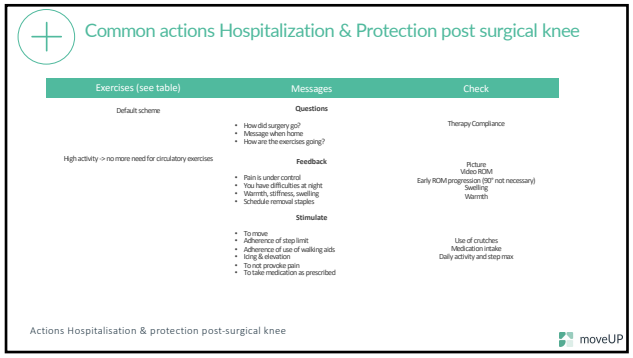

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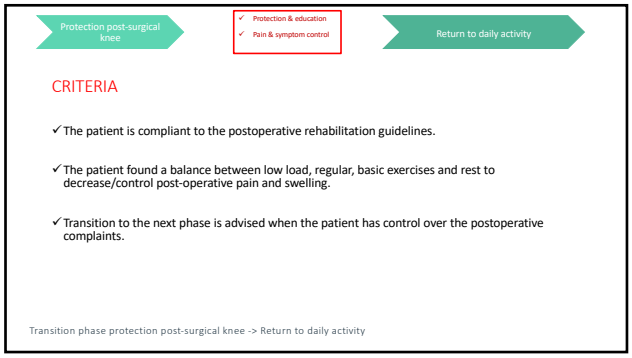

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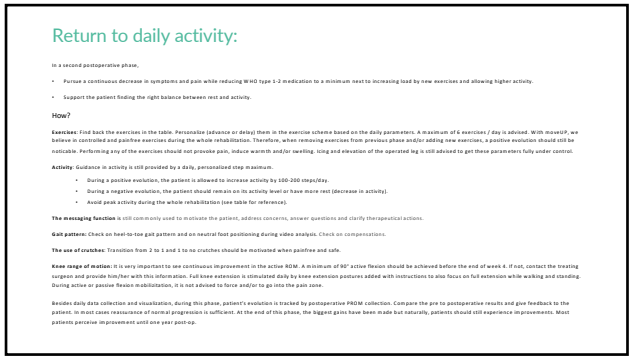

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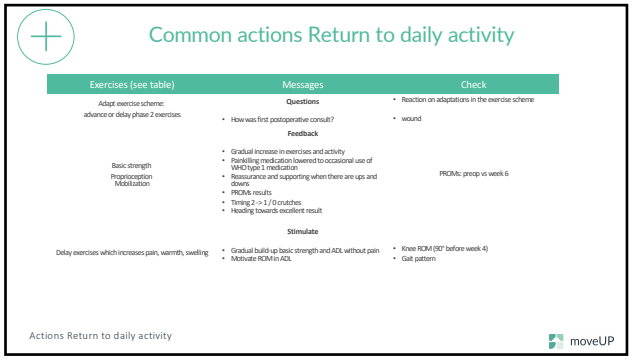

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Return to daily activity

✓ Minimum of pain
✓ Painkilling stopped or limited use

Return to active lifestyle

CRITERIA

- ✓ A minimum of / no pain
- ✓ A minimum feeling of warmth of the knee
- ✓ Painkilling medication stopped or limited to occasional intake of WHO type 1 medication
- ✓ No more NSAIDs
- ✓ **for some /a/ or exercises surgeon approval e.g. driving, biking, lunges, etc.**

Transition Return to daily activity -> Return to active lifestyle

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Return to active lifestyle

In a 1st postoperative phase,

- focus on functional strengthening exercises.

Exercises: Find back the exercises in the table. Gradually add the exercises one by one, while closely following the patient's parameters in the graph or table. Do not forget to remove exercises from previous phases. A maximum of 6 exercises / day is advised.

Before starting the functional strengthening exercises; pain, warmth and swelling are stable and at a low level. Medication is limited or stopped. During and after the functional strengthening exercises, these parameters should stay stable and/or at a minimum. There should be no need to increase medication intake.

During this phase, icing can still be usefull at the end of a busy day.

Activity: Stimulate a gradual increase in activity. Give recommendations about physical activity in general.

The messaging function: During this phase, reassurance of normal progression is often needed. Point out the fact that most patients notice a positive evolution up till 1 year after surgery.

Gait pattern: Check on heel-to-toe gait pattern and on neutral foot positioning during video analysis. Check on compensations.

Range of motion: While swelling and pain are reduced to a minimum, mobility should have evolved to 0 - 110° at around week 8-10. Consider that the achievable ROM greatly depends on the patient's preop mobility.

Finalize rehabilitation by checking if all expectations are met. You can check patient's satisfaction and outcome at the month 3 PROM collection.

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Common actions Return to active lifestyle

Exercises	Messages	Check
	Questions	
Adapt exercise scheme: advance or delay certain exercises	• How was the 3m consult? • How far from your goals/expectations? • Any movements/activities which are still difficult/painful?	Evaluate response on higher load
	Feedback	Videos ROM Videos gait
Functional strength	• Right timing 1 -> 0 crutches • PROMs 3 month	Patient satisfaction
	Stimulate	
	• Back to work • Full ADL uptake	
		• Functional ROM (110° + full extension) • Normal gait pattern

Actions Return to active lifestyle

moveUP

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Preop: day -x to day -1
Functional strength & mobility: Abduction, quadriceps setting, isometric gluteus, stationary bike, knee extension posture
! Adapted on demand and patient profile

Surgery – hospital stay: day 0 to day 1-5
Protocol hospital (DC) and depot
Elevation and circulation

Symptom control, proprioception and mobility: day 0 to day 21
Reduction swelling and pain, full extension, 90° flexion
Ice , Circulation, Rest and Regular Low Load Movement
Proprioception: Quadriceps settings

Basic strength and mobility: day 7 to day 60
Prevention of over-/underloading and build-up of ADL
Basic mobility: Pendeling, triple flexion, extension posture..
Basic strength: Side toe taps, mini squat ...

Functional strength: from day 35
Low load to higher load
Functional strength: Single leg stance, squats, lunges, bridging

day 0 | day 7 - 21 | day 35 - 60 | day x

Prep | Hospitalization Protection post-surgical knee | Return to daily activity | Return to active lifestyle

APPROACH knee arthroplasty

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Hip arthroplasty

Anterior protocol
- DAA
- ALA

Posterior protocol

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	Preparation	Hospitalization Protection post-surgical hip	Return to daily activity	Return to active lifestyle
Estimated time		Day 0 - 21	Day 10 –60	Day 35 and on..
Events		Surgery Hospital stay Discharge First week home Removal of staples	First postoperative consult	Second postoperative consult Back to work Driving car
Goal		Protection post-surgical hip Prevent complications Pain & symptoms control Proprioception	Gradually have no more pain <2/10 Gradual stop medication Basic strength Normalized gait pattern Prevent/minimalize groin pain Basic balance / coordination	Full ROM 0 crutches *Functional strength*
Actions (See tables)		Educate & support patient Supervise use of crutches/walker Supervise medication intake Provide pain free exercises Control activity level Check wound Gait check	Educate & support patient Advise 2 crutches -> 1/0 crutches Adapt exercise scheme	
Criteria next phase		Pain & symptom control Protection & education	A minimum of / no pain Painkilling medication stopped or limited to occasional intake of WHO type 1 medication No more NSAIDs	**For some /a/ or exercises surgeon approval is advised e.g. driving, biking, lunges**

Phases hip

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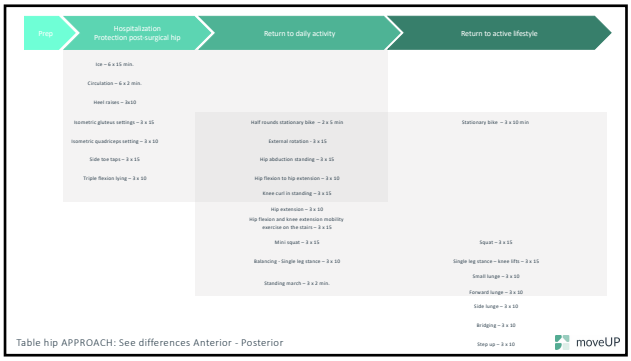

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Differences in surgical approach

Anterior protocol

More prone for hip flexor irritation
- Avoid extension past 20 degrees
- Avoid external rotation past 50 degrees

Anterior approach in daily exercise scheme:

Less focus on hip flexor exercises in acute phase, e.g.:
- Triple flexion (with assistance) 3x8: d7–d11–d15–d19 - …
- Hip flexion to extension 3x8: d9–d13–d17–d21 - …

More focus on abductor and glute exercises, e.g.:
- Side toe taps (3x15): d5-d7-d9
- Abduction (3x15): d11-d13-d15-…
- Mini squat (3x10): d10 –d12-d14-…

Posterior protocol

More prone for abductor weakness and/or irritation
- Avoid hip flexion past 90 degrees
- Avoid internal rotation past neutral
- Avoid adduction past neutral

Posterior approach in daily exercise scheme:

More focus on hip flexor exercises, e.g.:
- Triple flexion (without assistance) 3x10: d5–d7–d9–d11 - …
- Hip flexion to extension 3x10: d6–d8–d10–d12- …

Less focus on abductor and glute exercises in acute phase, e.g.:
- Side toe taps (3x10): d7-d11-d13
- Abduction (3x10): d15-d17-d19-…
- Mini squat (3x10): d14 –d16-d18-…

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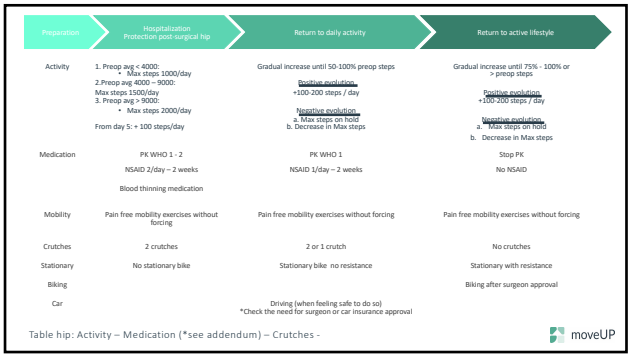

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Hospitalization & Protection post surgical hip

In a first postoperative phase,

- Focus on protection of the post surgical hip and education of the patient on how to do so: the patient should take its prescribed medication, use crutches, put ice and foresee rest and elevation of the operated leg
- Symptom control: Aim to get pain, warmth and swelling under control
- Low load mobility: Low load and light mobility exercises are advised, motivating the patient to move his/her leg regularly without loading and regularly changing position
- Attention!
  - Hip Anterior approach: See table don'ts
  - Hip Posterior approach: See table don'ts

How?

Exercises: See the exercises in the table. Focus is on circulatory and light mobility exercises. Circulatory exercises help drain postoperative blood and swelling and prevent thrombosis. Hamstrings setting stimulates proprioception and maintenance of musculature. These exercises are automatically active in the exercise scheme. Exercises against resistance or that provoke pain, swelling, stiffness and warmth are to be avoided, including during a face-to-face session! Guidance in activity is provided by a daily, personalized step maximum. (see table for reference)

The messaging is used to educate, motivate the patient, address concerns and answer questions.

The use of crutches/walkers should be supervised. Walking aids are important to prevent falling and lower the load on the hip so soft tissue get time to heal and subsidence is avoided.

Gait patterns: Check on heel-to-toe gait pattern and on neutral foot positioning during video analysis.

What if….

1) A patient doesn't manage to get his pain under control? 2nd line doctors can be flagged to give advice on medication. Most hip patients are advised to start with WHO step 1 painkillers. Step 2 painkillers can temporarily help high pain perceiving patients.

2) A patient reports a 'red flag'? Always flag 2nd line doctors in cases of a bleeding wound, picture of wounds, gastric problems, reports of fever, postop nausea, visit to general practioner, medication advice.

! : Regarding the wound care: a picture of the wound after removal of stitches/staples should be asked. Most wounds are stapled. The staples are removed starting from 14 days to 21 days postoperatively. Until staples are removed a patch should cover the wound. In most cases the patch should not be changed until this day (unless specifically stated by surgeon). Some wounds are

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Common actions Hospitalization & Protection post surgical hip

Exercises	Messages	Check
Default scheme	**Questions**	
	• How did surgery go? • Message when home • Removal staples • How are the exercises going?	Therapy Compliance
High activity -> no more need for circulatory exercises	**Feedback**	
	• Pain is under control • You have difficulties at night • Warmth, stiffness, swelling • Transfer from 2 -> 1 crutch: safe and pain free?	Picture hematoma Swelling Warmth
	Stimulate	
	• To move • Adherence of step limit • Adherence of use of crutches • Icing & elevation	Use of crutches Medication intake Daily activity and step max

Actions Hospitalization & Protection post-surgical hip
moveUP

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Protection post-surgical hip

- ✓ Protection & education
- ✓ Pain & symptom control

Return to daily activity

CRITERIA

✓ The patient is compliant to the postoperative rehabilitation guidelines.

✓ The patient found a balance between low load, regular, basic exercises and rest to decrease/control post-operative pain and swelling.

✓ Transition to the next phase is advised when the patient has control over its postoperative complaints.

Transition protection post-surgical hip -> Return to daily activity

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Return to daily activity

In a second postoperative phase,

- Pursue a continuous decrease in symptoms and pain while reducing WHO type 1-2 medication to a minimum next to increasing load by new exercises and allowing higher activity.
- Now having a clear overview on the patient's evolution during the first postoperative period, support the patient finding the right balance between rest and activity.
- Attention:
  - Hip Anterior approach: See table don'ts
  - Hip Posterior approach: See table don'ts

How?

Exercises: Find back the exercises in the table. Personalize (advance or delay) them in the exercise scheme based on the daily parameters. With moveUP, we believe in controlled and painfree exercises during the whole rehabilitation. Therefore, adding new exercises, a positive evolution should still be noticable and performing the exercises should not provoke pain, induce warmth and/or swelling. Icing and elevation of the operated leg is still advised to get these parameters fully under control.

Hip Anterior: Focus on hip abductors, provoke anterior region less

* Groin pain is often seen after hip arthroplasty; temporary, avoid exercises which provokes groin pain.

Activity: Guidance in activity is still provided by a daily, personalized step maximum.

- During a positive evolution, the patient is allowed to increase activity by 100-200 steps/day.
- During a negative evolution, the patient should remain on its activity level or have more rest (decrease in activity).
- Avoid peak activity during the whole rehabilitation (see table for reference).

The messaging function is still commonly used to motivate the patient, adres concerns and answer questions.

The use of crutches: Transition from 2 to 1 and 1 to no crutches should be motivated as pain free and safe.

Gait pattern: Check on heel-to-toe gait pattern and on neutral foot positioning during video analysis. Check on abductor strength or compensations.

Besides daily data collection and visualisation, during this phase, patient's evolution is tracked by postoperative PROM collection. Comparison pre to post can be made. Interpret the results and give feedback to the patient. In most cases reassurance of normal progression is sufficient. Of course there is still room for improvement there most patients still precieve evolution until 1 year postop.

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Common actions Return to daily activity

Exercises	Messages	Check
Adapt exercise scheme: Advance or delay phase 2 exercises	**Questions** • How was first postoperative consult?	• Reaction on adaptations in the exercise scheme • Wound • Gradual increase in activity/load with decrease of symptoms and pain
Basic strength Proprioception Mobilization	**Feedback** • Gradual increase in exercises and activity • Painkilling medication lowered to occasional use of WHO type 1 medication before starting next level exercises • Reassurance and supporting when there are ups and downs • PROMs results • Timing 2 -> 1 / 0 crutches • Heading towards excellent result	PROMs: preop vs week 6
Delay exercises which increases pain, stiffness, swelling	**Stimulate** • Gradual build-up basic strength and ADL without pain • Motivate ROM in ADL	• Gait pattern

Actions Return to daily activity

moveUP

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Return to daily activity

- ✓ Minimum of pain
- ✓ Painkilling stopped or limited use

Return to active lifestyle

CRITERIA

- ✓ A minimum of / no pain
- ✓ A minimum feeling of stiffness & swelling of the hip
- ✓ Painkilling medication stopped or limited to occasional intake of WHO type 1 medication
- ✓ No more NSAIDs
- ✓ **for some /a/ or exercises surgeon approval e.g. driving, biking, lunges, etc.**

Transition Return to daily activity -> Return to active lifestyle

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Return to active lifestyle

In a 3rd postoperative phase,

- focus on functional strengthening exercises.

Exercises: Gradually add the exercises one by one, while closely following the patient's parameters in the graph or table.

Before starting the functional strengthening exercises, pain, warmth and swelling are stable and at a minimum. Medication is limited or stopped. During and after the functional strengthening, these parameters should remain stable and/or at a minimum. There should be no more need for (extra) medication also.

During this phase, icing can still be usefull at the end of a busy day.

Activity: Stimulate a gradual increase in activity.

The messaging function: During this phase, reassurance of normal progression is often needed. Point out the fact that most patients notice a positive evolution up till 1 year after surgery.

Gait pattern: Check on heel-to-toe gait pattern and on neutral foot positioning during video analysis. Check on abductor strength or compensations.

Finalize rehabilitation by checking if all expectations are met. You can check patient's satisfaction and outcome at the month 3 PROM collection.

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Common actions Return to active lifestyle

Exercises	Messages	Check
	Questions • How was final consult? • How far from your goals/expectations? • Any movements/activities which are still difficult/painful?	
	Feedback • Right timing 1 -> 0 crutches • PROMs 3 month	Videos gait Patient satisfaction
Functional strengthening	**Stimulate** • Back to work • Full ADL uptake	
		• Functional ROM • Normal gait pattern

Actions Return to active lifestyle

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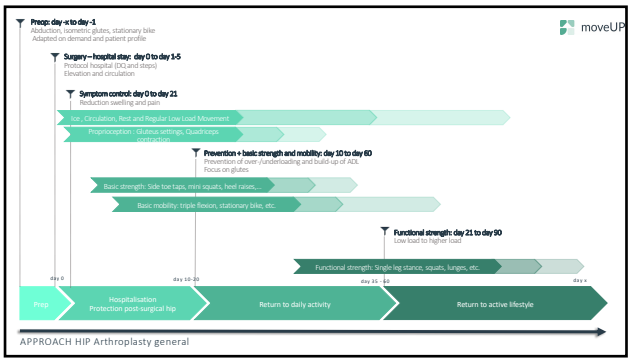
moveUP
Prep: day -x to day -1
Abduction, isometric glutes, stationary bike
Adapted on demand and patient profile
Surgery – hospital stay: day 0 to day 1-5
Protocol hospital (DC and steps)
Elevation and circulation
Symptom control: day 0 to day 21
Reduction swelling and pain
Ice , Circulation, Rest and Regular Low Load Movement
Proprioception : Gluteus settings, Quadriceps contraction
Prevention + basic strength and mobility: day 10 to day 60
Prevention of over /underloading and build-up of ADL
Focus on glutes
Basic strength: Side toe taps, mini squats, heel raises,...
Basic mobility: triple flexion, stationary bike, etc.
Functional strength: day 21 to day 90
Low load to higher load
Functional strength: Single leg stance, squats, lunges, etc.
day 0
day 10-20
day 35 - 60
day x
Prep
Hospitalisation
Protection post-surgical hip
Return to daily activity
Return to active lifestyle
APPROACH HIP Arthroplasty general

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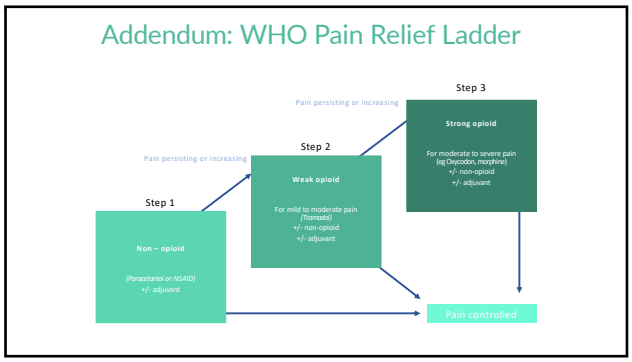
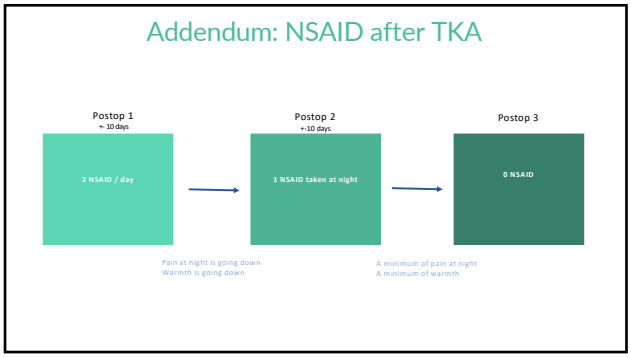

Addendum: WHO Pain Relief Ladder
Step 3
Pain persisting or increasing
Strong opioid
For moderate to severe pain
(eg Oxycodon, morphine)
+/- non-opioid
+/- adjuvant
Step 2
Pain persisting or increasing
Weak opioid
For mild to moderate pain
(Tramadol)
+/- non-opioid
+/- adjuvant
Step 1
Non – opioid
(Paracetamol or NSAID)
+/- adjuvant
Pain controlled

44


Addendum: NSAID after TKA
Postop 1
+ 10 days
2 NSAID / day
Postop 2
+-10 days
1 NSAID taken at night
Postop 3
0 NSAID
Pain at night is going down
Warmth is going down
A minimum of pain at night
A minimum of warmth

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moveUP

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[redacted]

How to onboard a new patient on the moveUP platform?

Onboarding is the process of registering and starting a new patient in the moveUP platform. After registering a patient in the platform, an invitation mail can be send. In this mail, the patient will receive all the needed information to install and activate the moveUP application.

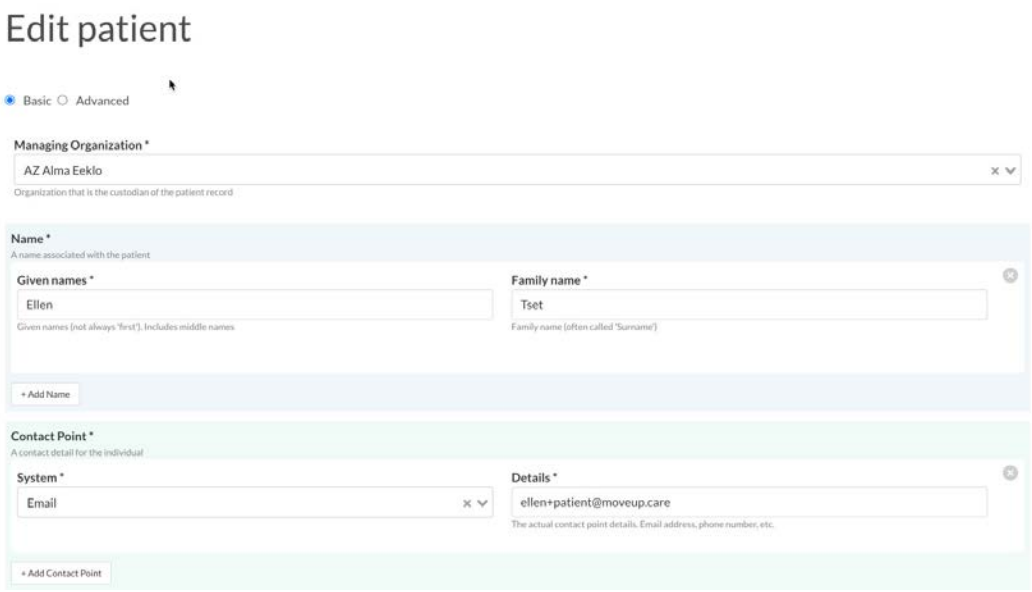
1. Create a new patient in the onboarding functionality

- Surf to: https://patient-onboarding-admin.moveup.care.
- Fill out your moveUP login credentials and click “Login”.
- Click “New patient”.

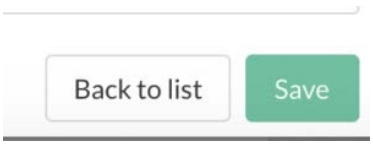
Create new patient

2. Fill out the patient's details

- Fill out the patient's details.
- Click 'save'.



Edit patient details



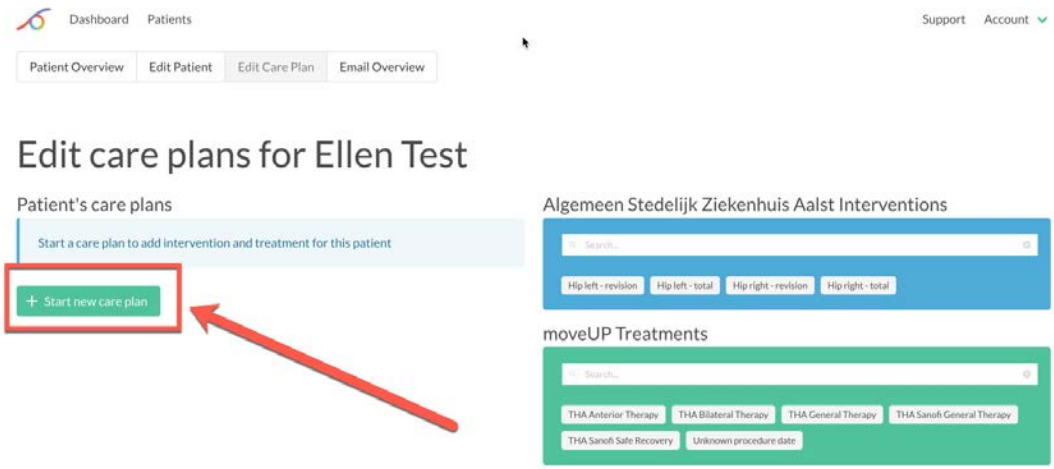
Save patient details

Only one account can be coupled to an e-mail address. It is not possible to reuse an e-mail address that is already known within the moveUP database, e.g.: reusing the same e-mail address for the account of a partner or parent.

3. Add a new care plan to the patient

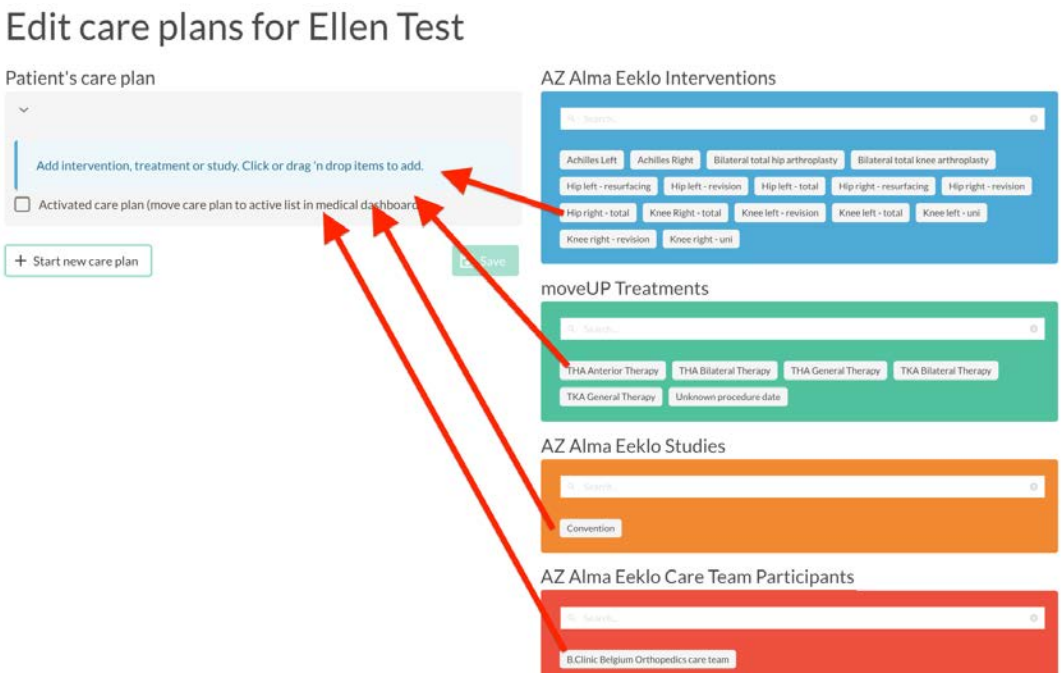
A care plan is a crucial part of the digital care journey of your patient. A care plan determines what will be visible for your patient in the moveUP application, e.g.: type of exercises, information modules, message functionality, etc. A care plan usually consists out of an intervention, a moveUP treatment and (a) care team(s).

- The “Edit Care Plan” tab will automatically open after entering patient’s details.
- Click “Start new care plan”.

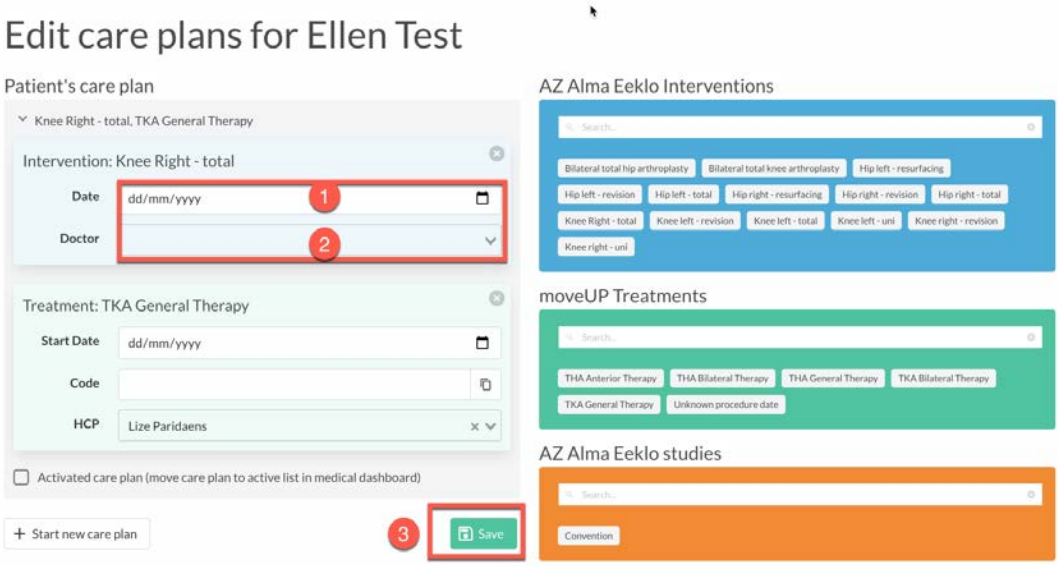


Create a new care plan

- Drag and drop an intervention to the care plan.
  - Fill out the intervention date (e.g.: operation date) and the name of the treating doctor (e.g.: surgeon).



Drag and drop to create a care plan



Add type of intervention, date of intervention and doctor

- Drag and drop a moveUP treatment.
  - REMARK: The treatment's start date is set automatically to today's date if you don't fill it out. In most cases, it is not needed to set a date. This is only done in case the intervention or intervention date is not yet known.

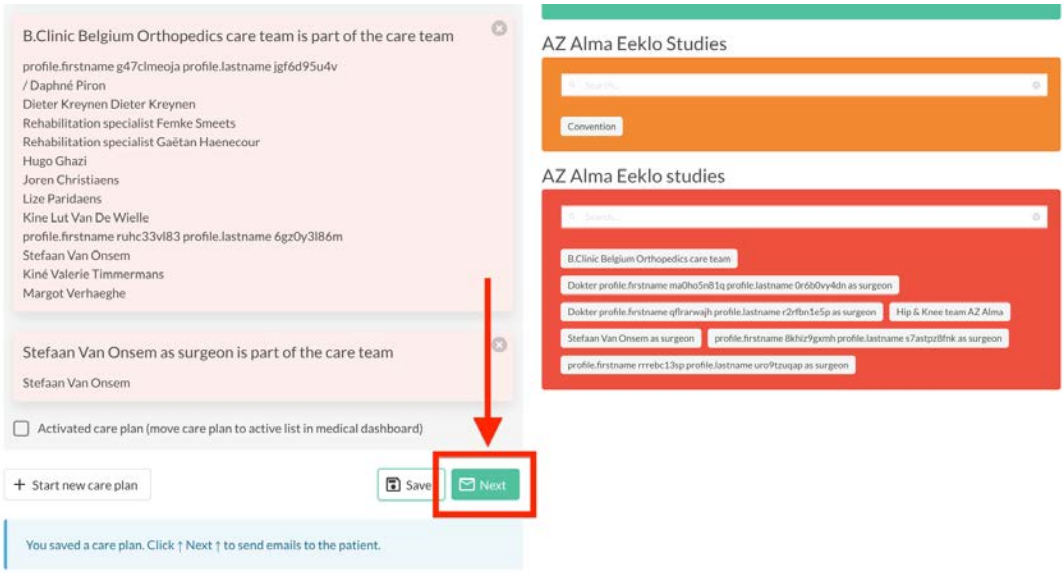
- Drag and drop a study if applicable.
- Drag and drop care team(s) or care team participants.
- Click 'save'.

Care team participants determine which healthcare providers will have access to the patient's account on the moveUP platform. The type of moveUP healthcare providers accounts determines which data this healthcare provider can access. Someone with a support role (e.g.: moveUP support staff) will not have access to the same data as the treating surgeon for example.

Care team participants are added automatically based on the type of intervention, however it is possible to manually add or remove a healthcare provider from the patient's care team if needed.

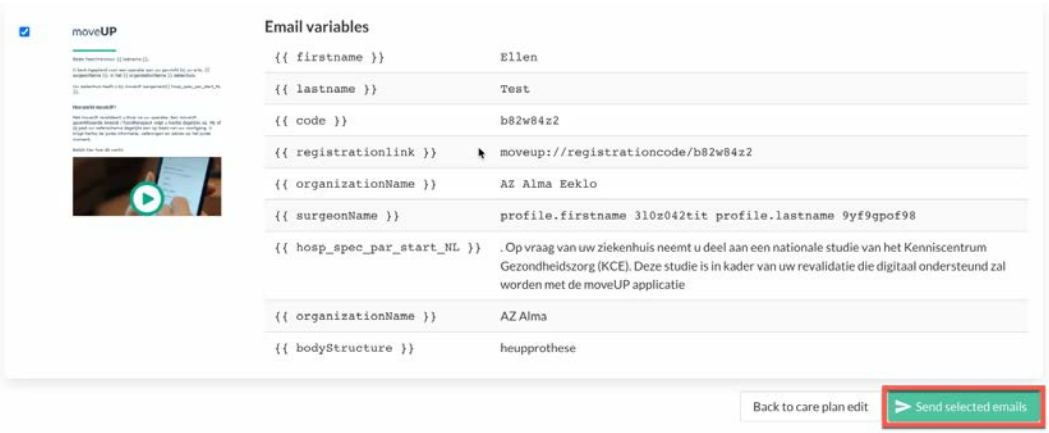
4. Send an invitation email to patients

- Once a care plan is saved, click on “Next”.



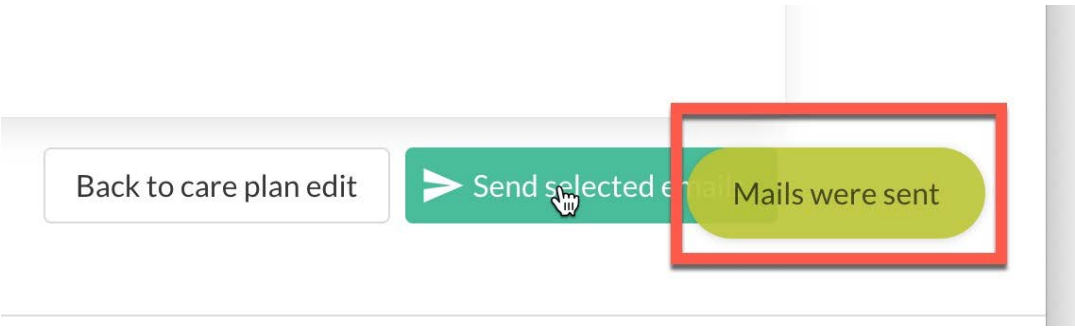
Click on ‘Next’

- A template of the email(s) that will be sent to the patient is shown.
- Click on “Send selected email(s)” to send the emails to the patient.



Email template proposal

- A message “mails were sent” will appear for a few seconds so you know the mails are successfully sent.



Confirmation mail(s) sent

5. What happens next?

The patient will receive an **invitation email** with

- **Instructions how to install moveUP**— With a short introduction of moveUP, information link on pricing and instructions on how to install moveUP with login details, and a link to the quick start guide.

In case the moveUP treatment of your patient also uses **an activity tracker**, the patient will receive a second email with :

- **Link to order activity tracker** and confirm his/her subscription— With an order form for the activity tracker.

How to stop the treatment of a patient?

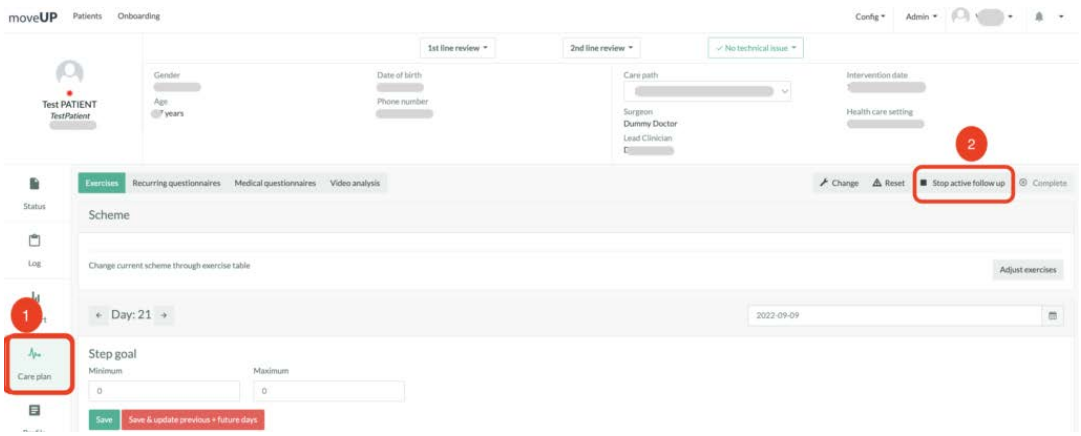
To stop the follow-up of your patient, **there are two mains steps** to follow.

Table of Contents

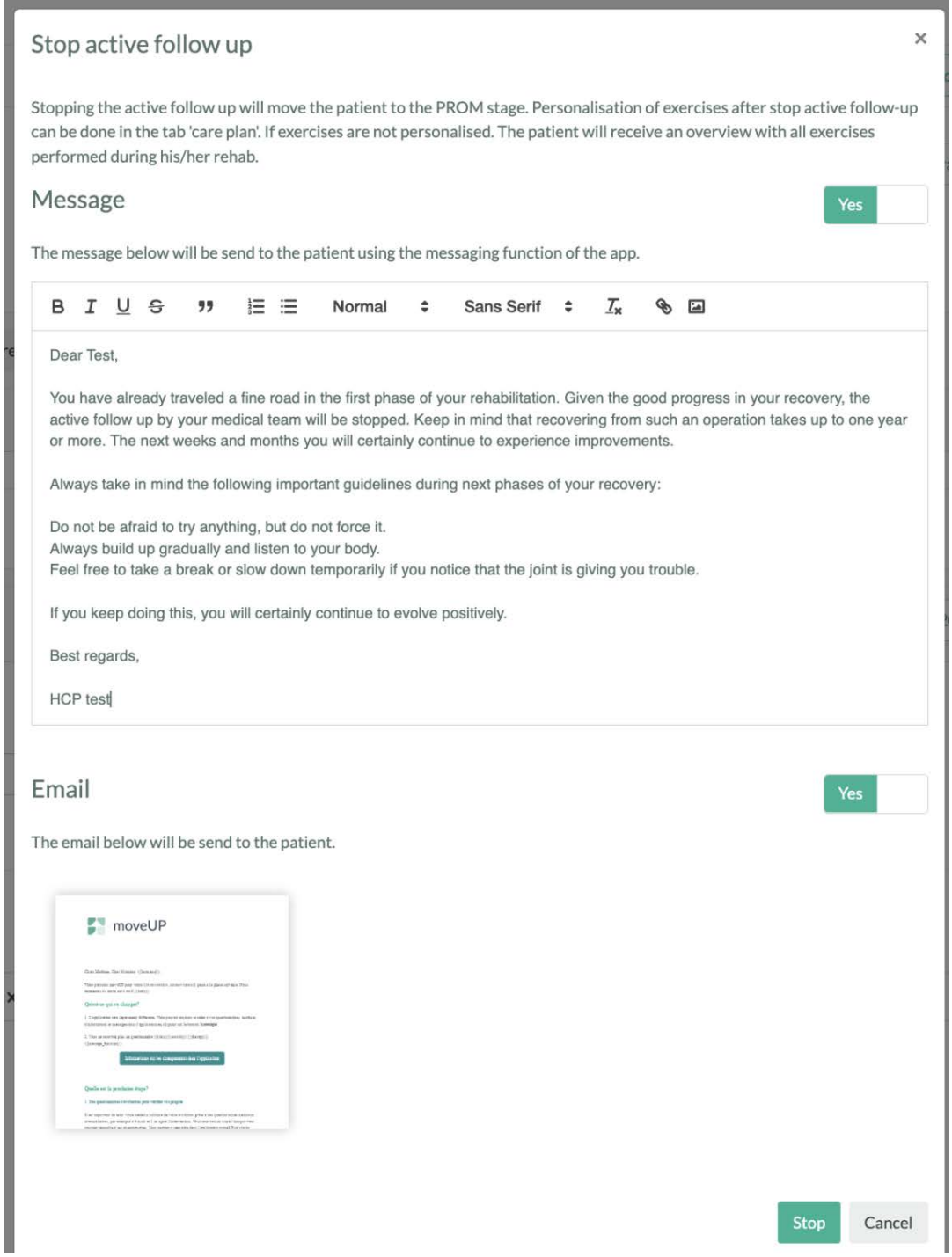
1. Stop active follow-up in care plan tab
2. Fill out the stop form
3. Optional: Adjust exercises for the patient if you want to personalize them
   - Personalize general exercise message for patient
   - Personalize the available exercises to a patient

1. Stop active follow-up in care plan tab

1. Go to the Care plan tab
2. Click on “Stop active follow up” in the top right of the Care plan tab.

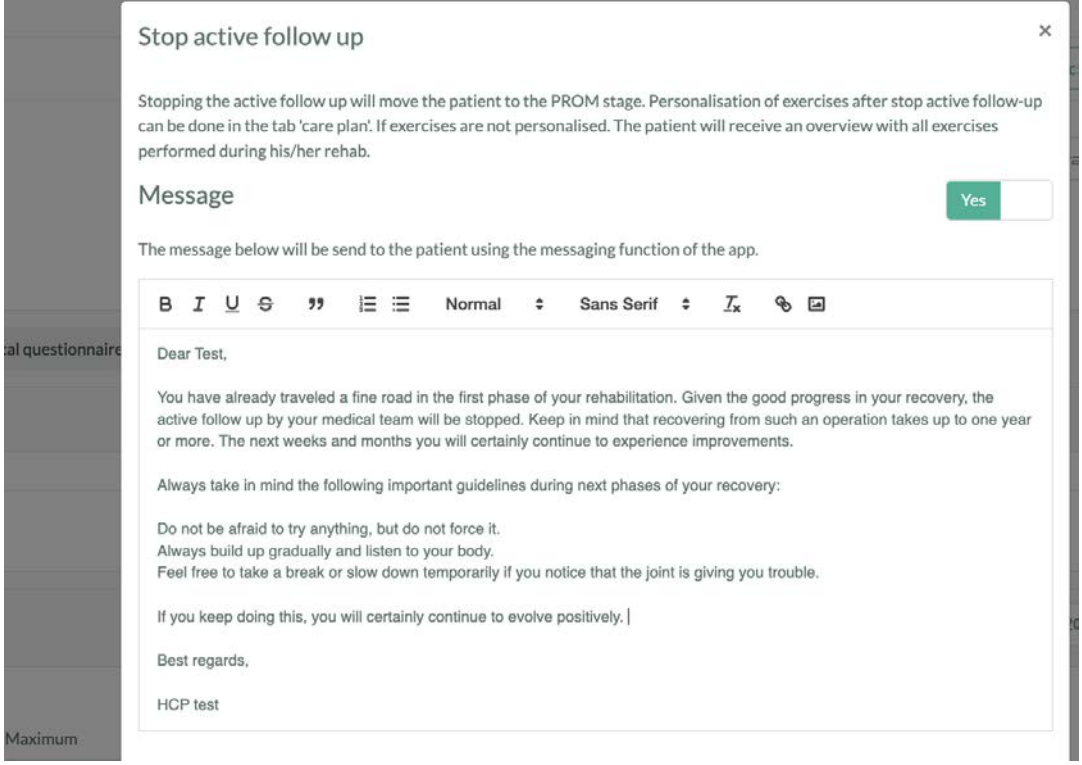


3. The following pop up will appear.

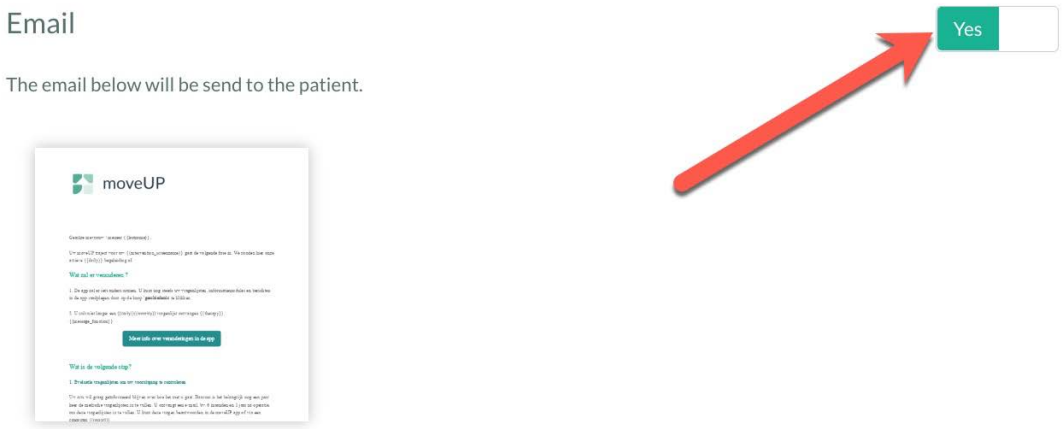


4. A default chat message will be set on “Yes” and below it you may read the chat message that will be sent to the patient when clicking “stop” at the bottom. You can also edit this message if you want to personalize it. If you don’t want to send a chat message you can toggle this option to “No”.

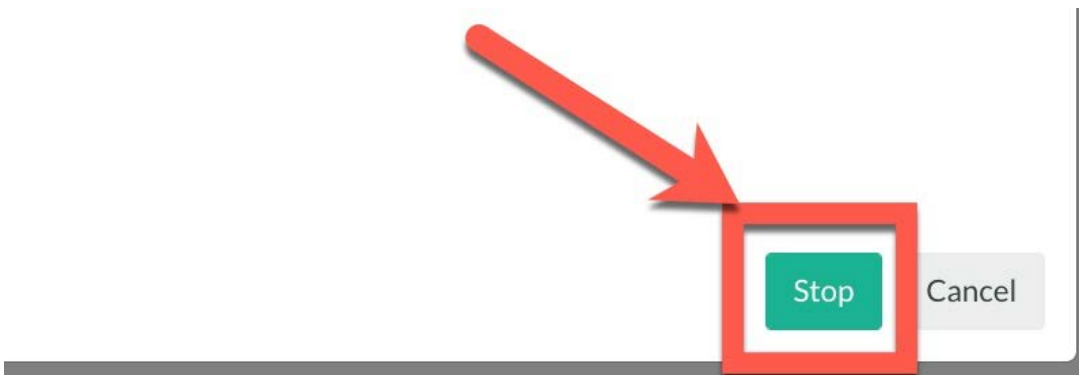
⚠ The message is designed for a patient that is doing well at the end of his rehabilitation. In case of opt-out, early end of follow-up, etc., this message really needs to be adapted or toggled off.



5. In addition, a default email with administrative info will be sent to the patient (e.g. how reimbursement and invoicing are arranged, how to send back the activity tracker etc.). If you don't want to send this e-mail, you can toggle it off.

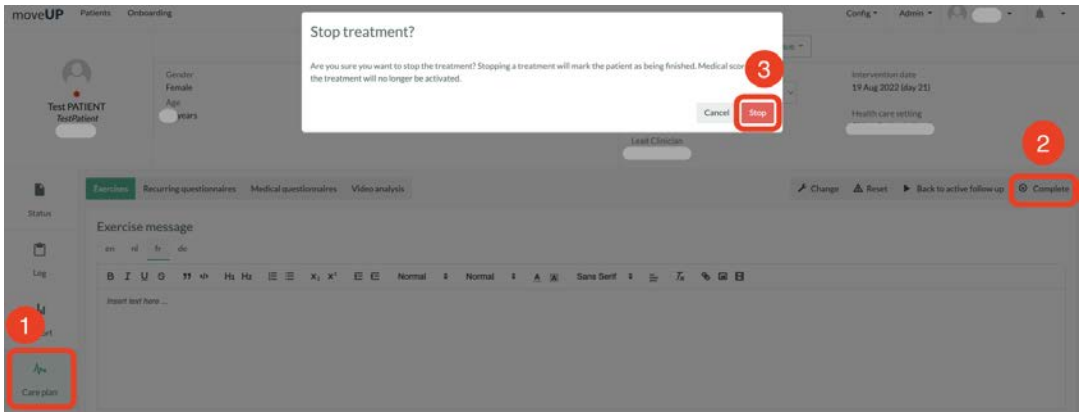


6. If you are ready to stop the active follow-up, you can click on "Stop".



The patient will no longer be listed in the “Therapy” tab. You can now find him in the “PROM” tab or also in the “All” tab.

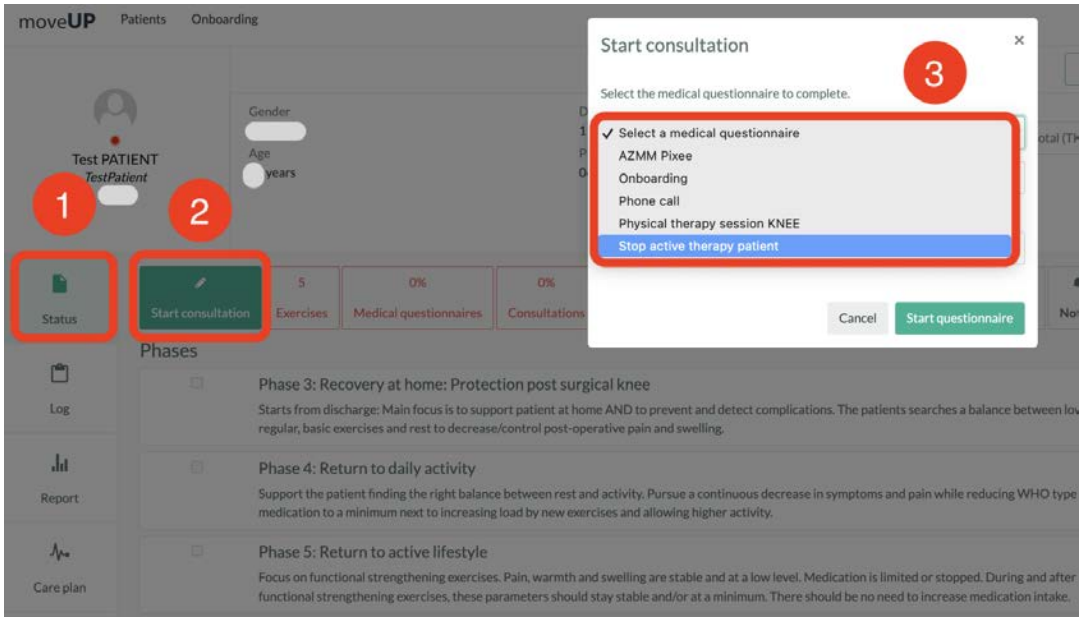
In case of opt-out, early end of follow-up or if your patient does not wish to receive any more emails from moveUP, you must complete his follow-up. The patient will appear in the “Completed” tab.



2. Fill out the stop form

To fill out the form:

1. Go to the status tab
2. Click “start consultation”
3. Choose “Stop active therapy patient”

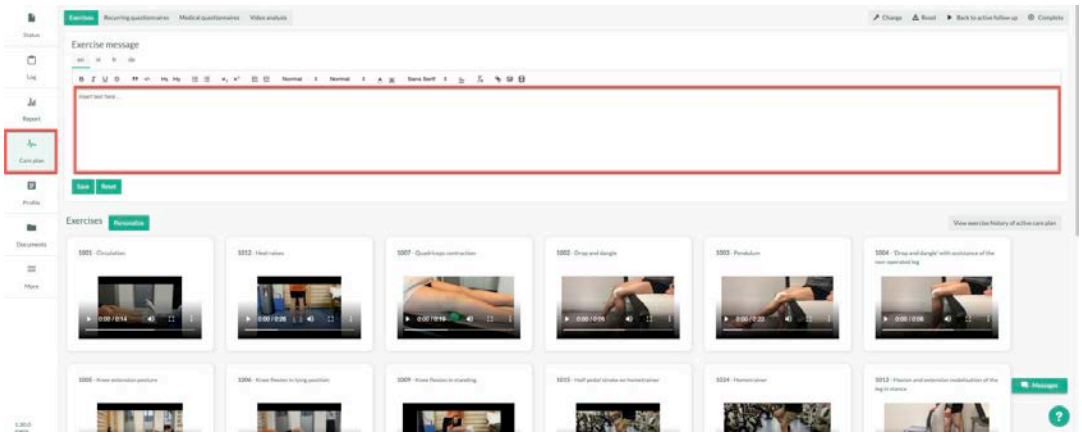


3. Optional: Adjust exercises for the patient if you want to personalize them

Once the active follow-up has been stopped, we still want the patient to have access to the exercises executed during their rehabilitation. By default, the patient will see an overview of these exercises.

Personalize general exercise message for patient

If you want to personalize the message the patient sees in his app, you can do this by adding your message in the medical dashboard in the care plan tab.

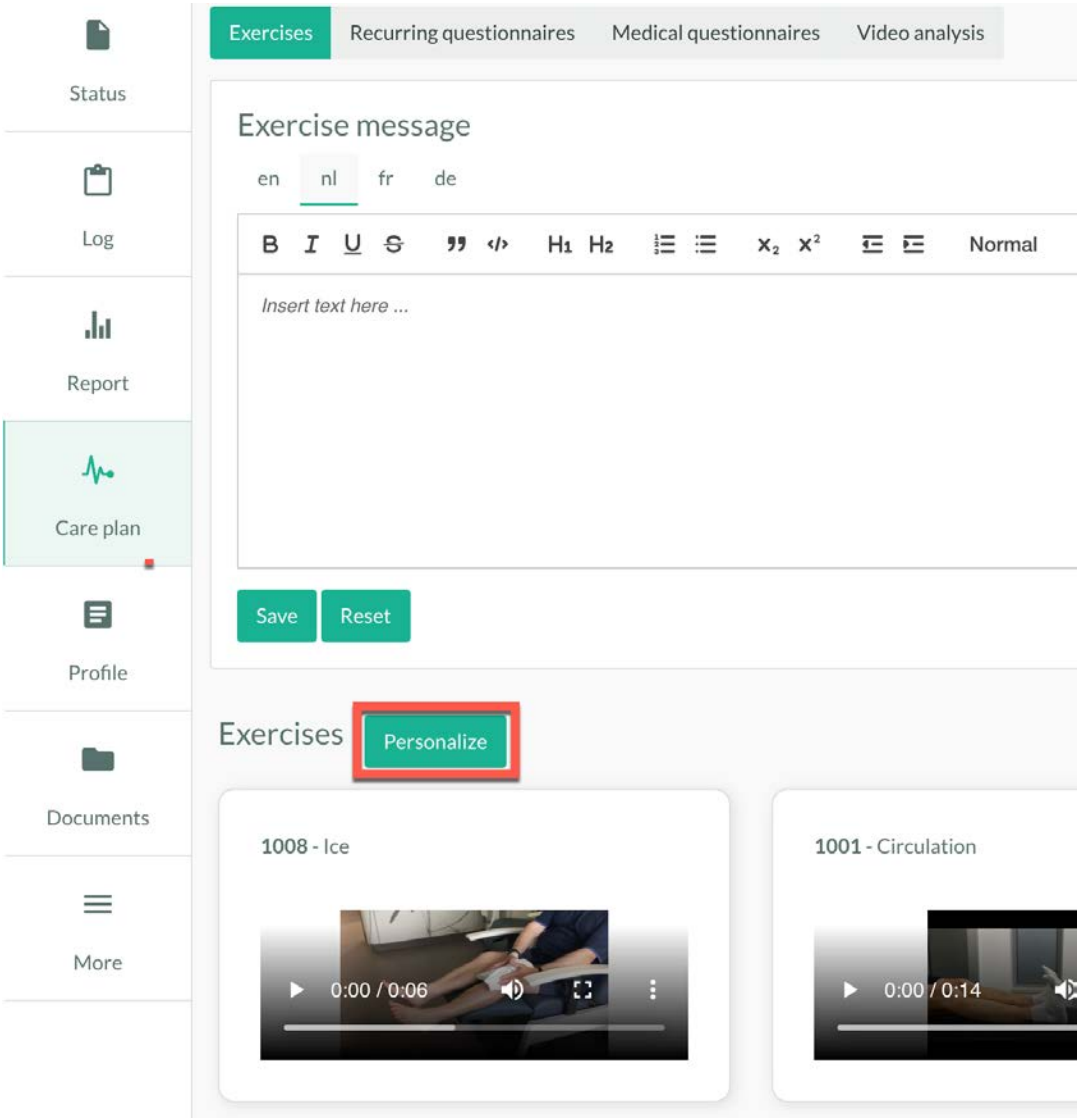


The patient will see this message like this in the app:

Personalize the available exercises to a patient

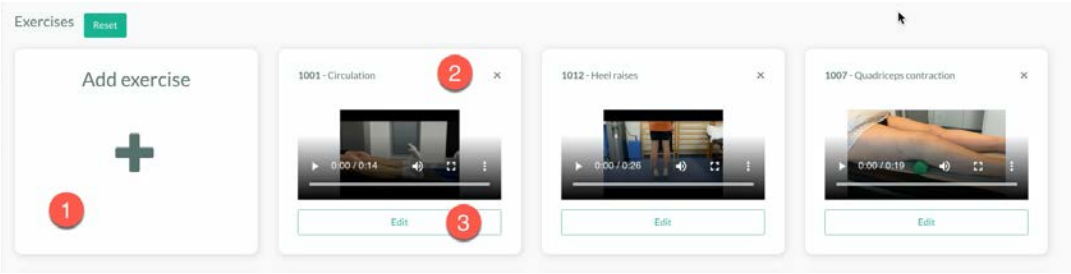
To make sure the patient has the best experience possible, try to personalize which exercises the patient will see (by default it will be all exercises that were active during active follow-up). It is also possible to include a message related to the specific exercises.

To personalize the exercises click “personalize” in the care plan tab.

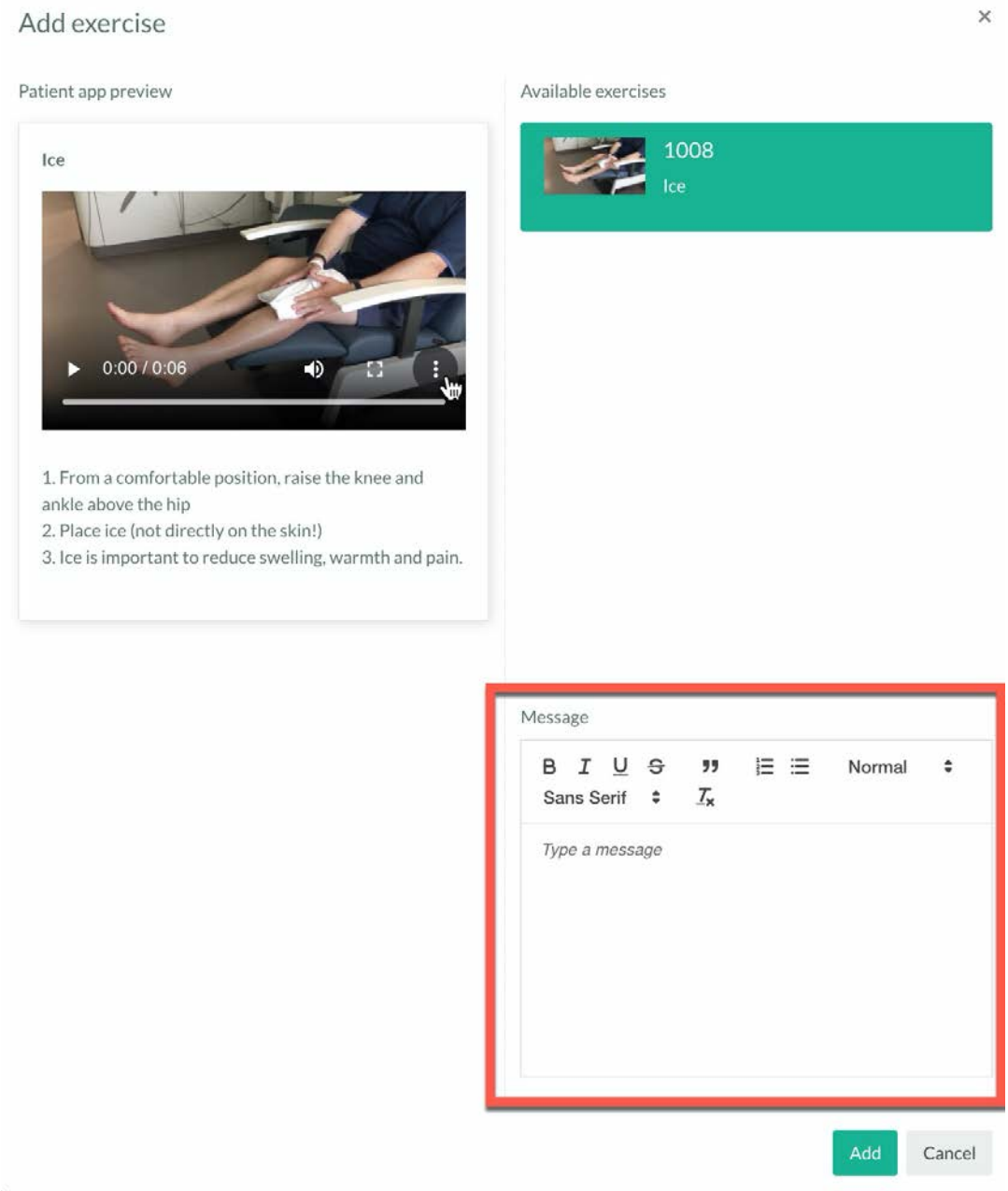


To change the available exercises you can:

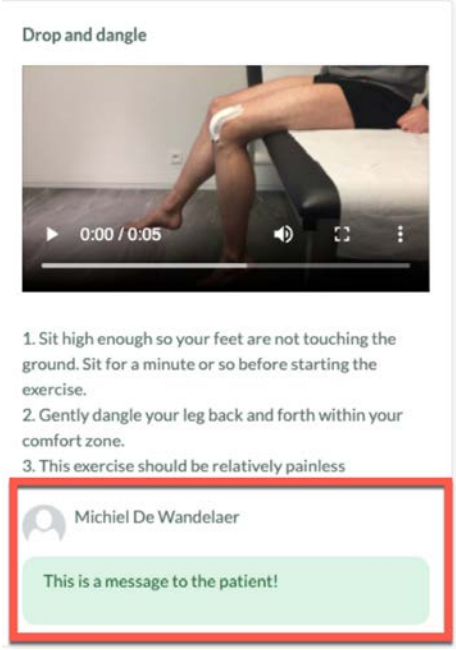
- Add exercises: click on the + (1)
- Remove exercise: click on the x (2)
- Add personal message to an exercise: click edit (3)



In the pop-up menu that appears you can type a personal message that goes with that exercise:



The patient will see this message in the exercise overview:


Drop and dangle
0:00 / 0:05
1. Sit high enough so your feet are not touching the ground. Sit for a minute or so before starting the exercise.
2. Gently dangle your leg back and forth within your comfort zone.
3. This exercise should be relatively painless
Michiel De Wandelaer
This is a message to the patient!

[redacted]