HERANTIS PHARMA

Toward clinical breakthroughs based on leading science

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Breaking the boundaries of standard therapeutic approaches

Herantis aims at breakthroughs in unmet clinical needs

Parkinson's disease (PD)

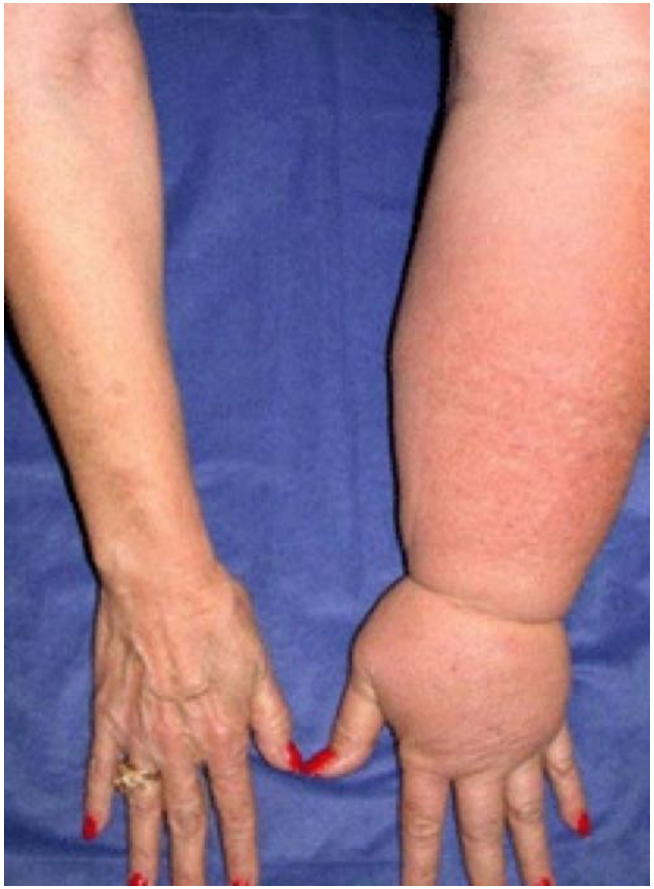
PD is an incurable brain disease whose first symptoms include tremors, muscle stiffness

- Symptoms grow worse with disease progression
- Known drugs **only treat motor symptoms**, only for a while

Lymphedema (LE) is chronic, progressive swelling due to accumulation of lymph

- Common consequence of cancer therapies
- Disabling, disfiguring and painful disease
- **No efficacious therapies**

Secondary lymphedema



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Parkinson's facts:

- Second most common neurodegenerative disease: **7-10 million patients**
- Estimated annual financial burden of PD is **$50 billion**
- Progression-stopping therapy would save the society over **$400,000 per patient** in the USA*

*University of Pennsylvania's National Parkinson Foundation

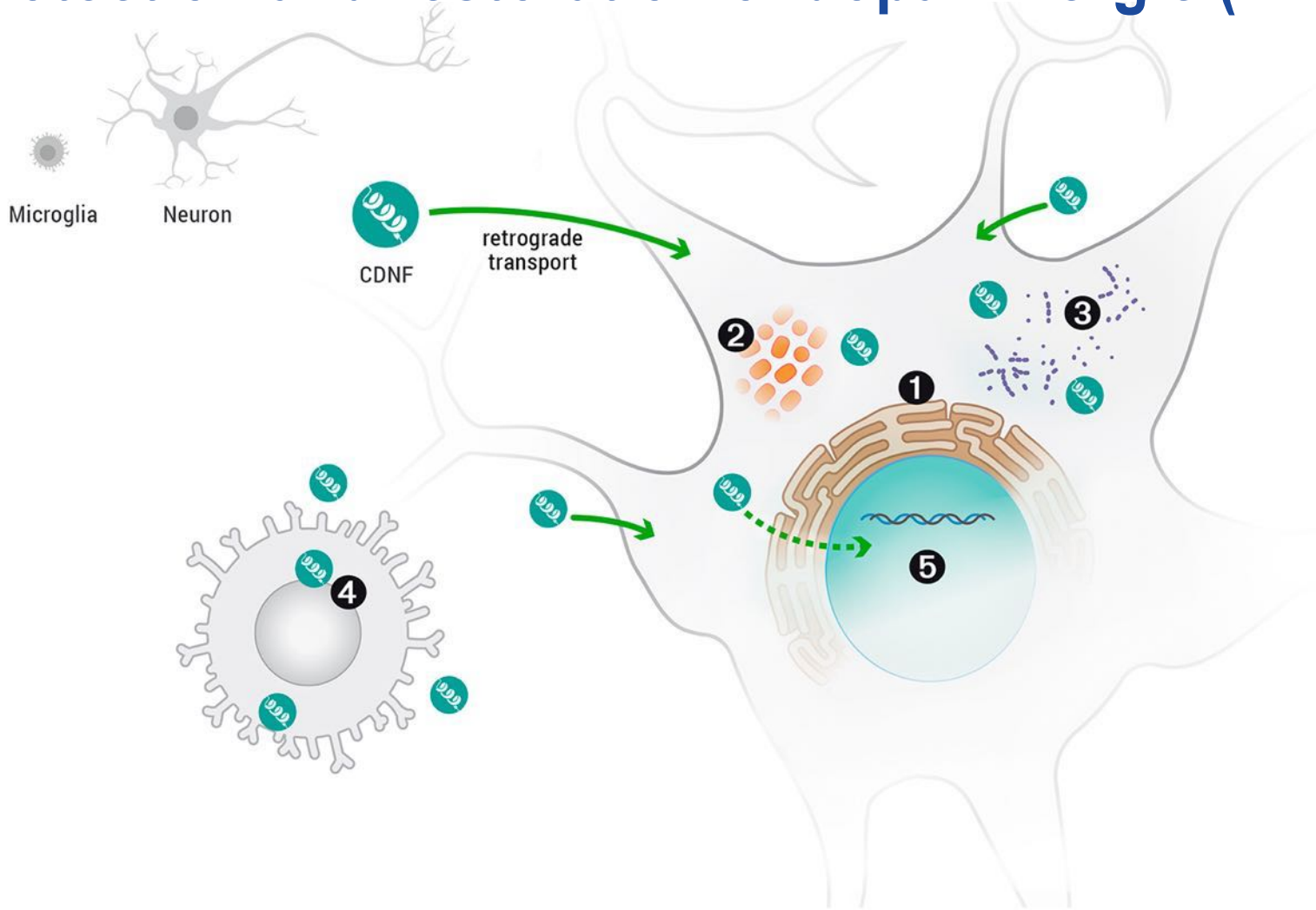
Lymphedema facts:

- 140 million LE patients
- 2 million breast cancer diagnosis annually

  → 30% of patients who undergo mastectomy will develop Breast Cancer Associated Lymphedema (BCAL)
- In USA, **annual cost** of lifelong symptomatic BCAL treatment $10,000 - $20,000

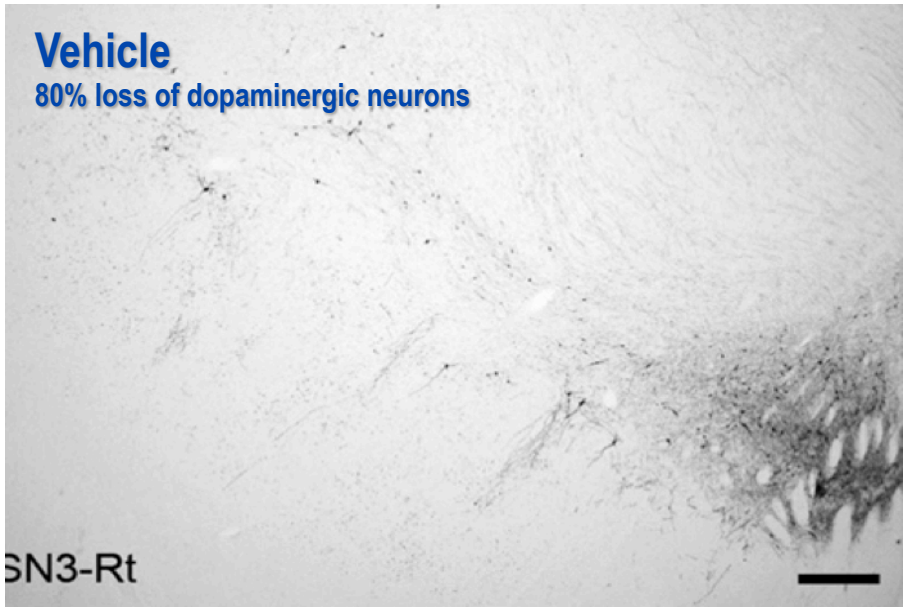
By developing disease-modifying treatments we fight both human suffering and societal costs

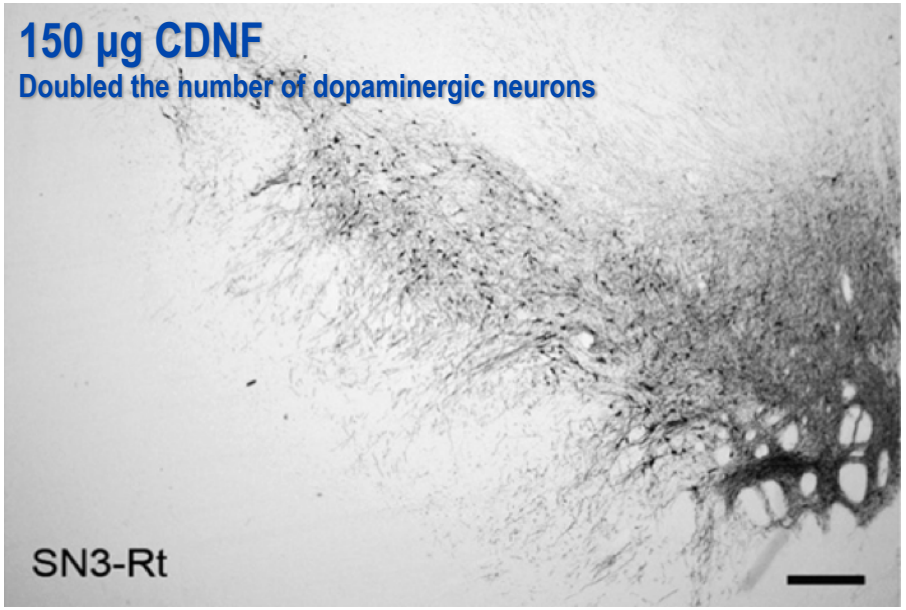
CDNF has the potential to change Parkinson's disease: Protection and restoration of dopaminergic (DA) neurons



1. CDNF promotes neuronal survival and functionality by reducing endoplasmic reticulum (ER) stress
2. CDNF promotes neuronal survival by activating Protein Kinase B (Akt)
3. CDNF inhibits α-synuclein oligomerization and toxicity
4. CDNF suppresses production and secretion of proinflammatory cytokines by glial cells
5. CDNF supports maintenance of neuronal functions by enhancing transcription of genes involved in e.g. dopamine synthesis and metabolism

CDNF doubled the number of DA neurons in a PD model*





- Disease model: MPTP lesion model in aged Rhesus monkey
- Three monthly CDNF doses **doubled the number of DA neurons**
- Significant improvement in gross motor function, fine motor function, and **for the first time in the world**, non-motor symptoms

* Research collaboration with University of Pittsburgh funded by Michael J. Fox Foundation

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CDNF may change how patients live with PD

CDNF is in Phase 1-2 clinical study funded by EU: "**Leading science, greatest potential** to advance clinical practice"

- Study fully recruited: 17 patients randomized in CDNF vs. placebo groups
- First-in-human study in advanced PD patients → Primary endpoint is safety
- First results suggest CDNF is safe, with **encouraging biological responses** in some patients; treatments continue through 1H/2020

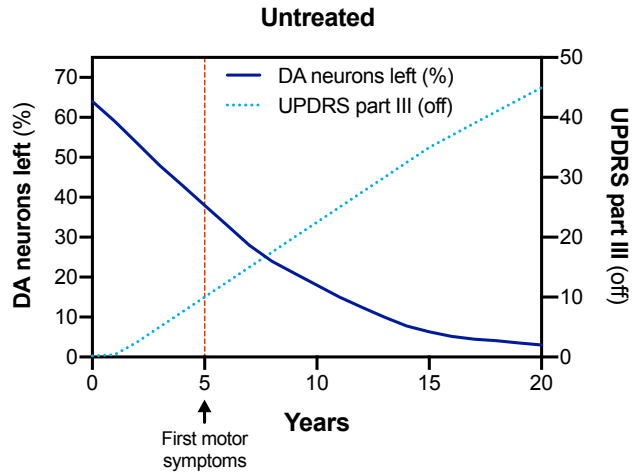
CDNF Phase 1-2 study has completed first 6 months of treatment: Initial conclusions

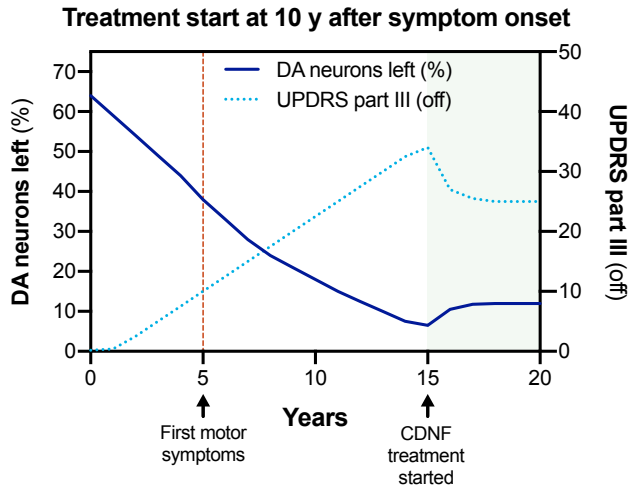
- **Primary endpoint met**: CDNF is safe and well tolerated in **advanced PD patients**
  - Similar safety profile in placebo and CDNF dose groups
- The study uses DAT-PET imaging as a surrogate biomarker for disease progression; after 6 months, some patients show **even significant increase** in putamenal DAT binding potential, suggesting biological response to CDNF in the target infusion area: **Signal of disease-modifying potential**
  - In the other CDNF group, 60% of patients show increased signal in DAT-PET
  - Data analyses continue; e.g. 6-month alpha-synuclein results are pending
  - We have seen promising signals in some patients **also in other endpoints**; this will be investigated further during the continued CDNF treatments
- **Next read-out expected in Q3 2020** (after 12 months of CDNF treatment)
- Based on scientific data, we expect an even greater impact in earlier-stage patients

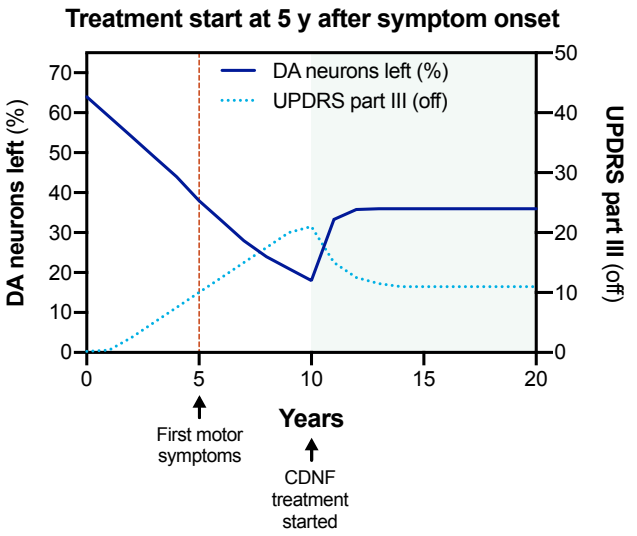
Planned next step: Phase 2 in earlier stage Parkinson's patients

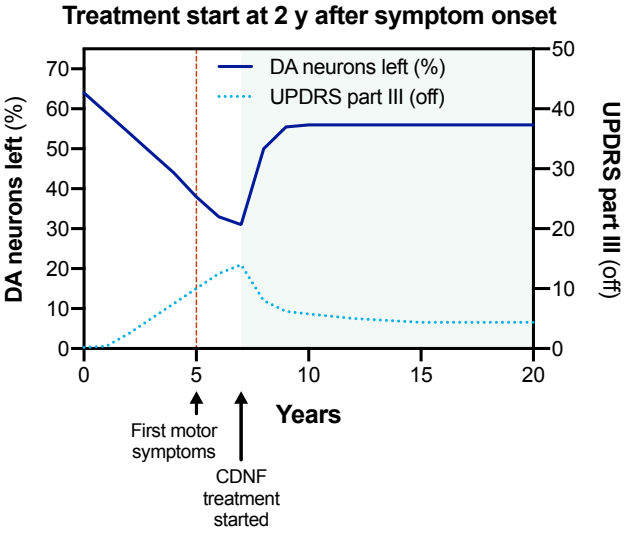
Hypothesis explained in the pictures:

- PD symptoms grow worse, i.e. UPDRS score increases, as dopaminergic (DA) neurons continue to decrease
- The clinical relevance of neurorestorative CDNF treatment is **expected to increase significantly** if started at earlier stage of the disease: more DA neurons restored and protected → less symptoms









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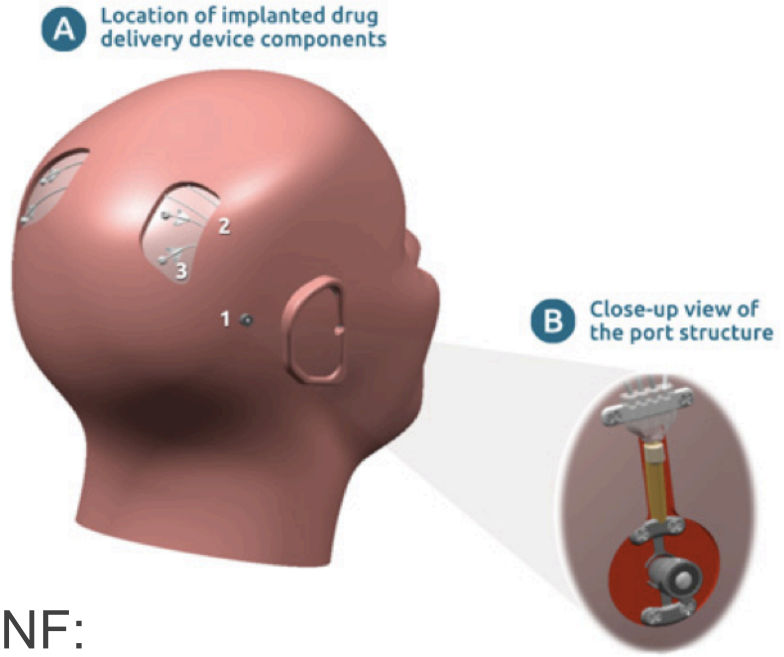
Next generation: xCDNF



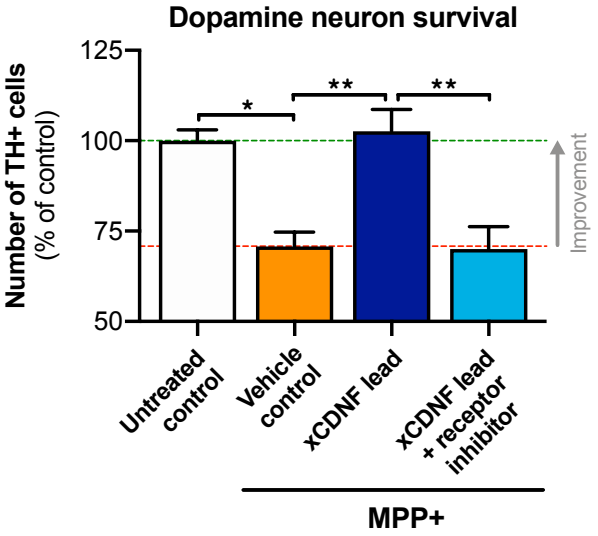
- Common challenge in central nervous system diseases is drug delivery to the brain → CDNF is dosed with a sophisticated medical device

- We have shown that certain fragments of CDNF:
  1. Retain its biological activity (comparable efficacy in PD models)
  2. Penetrate the BBB → **no need for medical device**
  3. Have therapeutic potential in several indications beyond Parkinson's disease: e.g. Alzheimer's, ALS, stroke

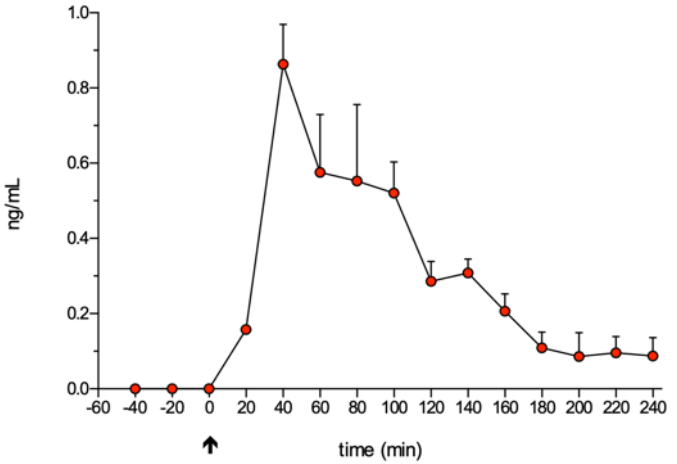
➢ **Based on current data xCDNF could be administered as easily as insulin**

xCDNF lead optimization: Exciting progress

- We have developed novel xCDNF compounds that
  (1) have the cell-protective activity of CDNF,
  (2) are metabolically stabilized, and
  (3) can effectively penetrate the blood-brain barrier
  - In the MPP+ model, xCDNF lead compound is capable of **complete restoration** of dopaminergic neurons, with a confirmed mechanism of action
  - We have shown *in vivo*, measured real-time in living animals, that intravenously administered xCDNF lead compound **reaches clinically relevant concentrations in the brain**
- Clinical signals on efficacy with CDNF are also highly encouraging for xCDNF, and de-risk its development: Both are based on the same mechanisms



Brain penetration kinetics of an xCDNF lead in rats



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Lymfactin® gene therapy aims at curing secondary lymphedema

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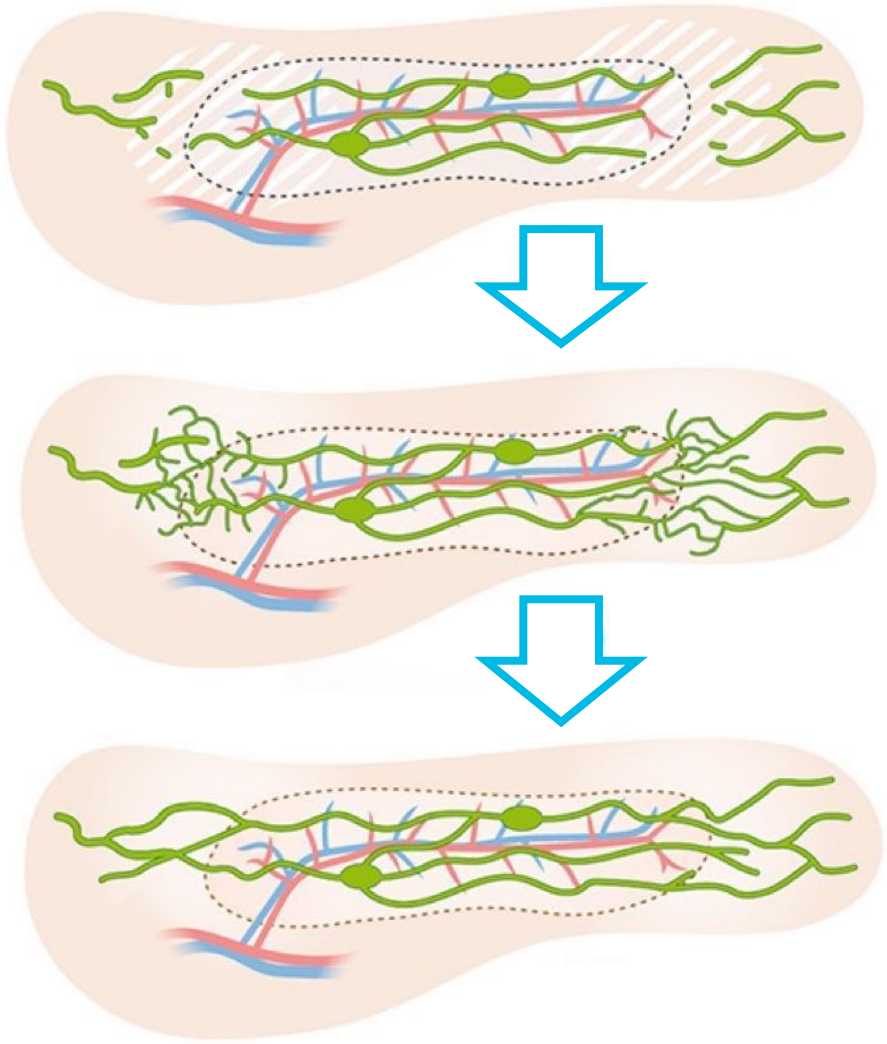
Lymfactin®: VEGF-C gene therapy to reconstitute the lymphatic system

1. A single Lymfactin® injection results in local **VEGF-C expression** for about 2 weeks
2. VEGF-C is the natural human protein that promotes the **growth of lymphatic capillaries**
3. Lymphatic capillaries mature into functional lymphatic vessels, reconstituting the lymphatic system



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Lymfactin® development

- **Phase 2 study AdeLE**: recruitment completed, and all treatments concluded, in patients with breast cancer associated LE (BCAL)
  - Adjunct to lymph node transplantation surgery, which aims to relieve symptoms
  - Study centers: 5 university hospitals in Sweden and Finland
- Safety established in Phase 1 study in same patient group & setup
  - **Promising improvements observed** in signs and symptoms of LE after 12-month follow-up (uncontrolled data)

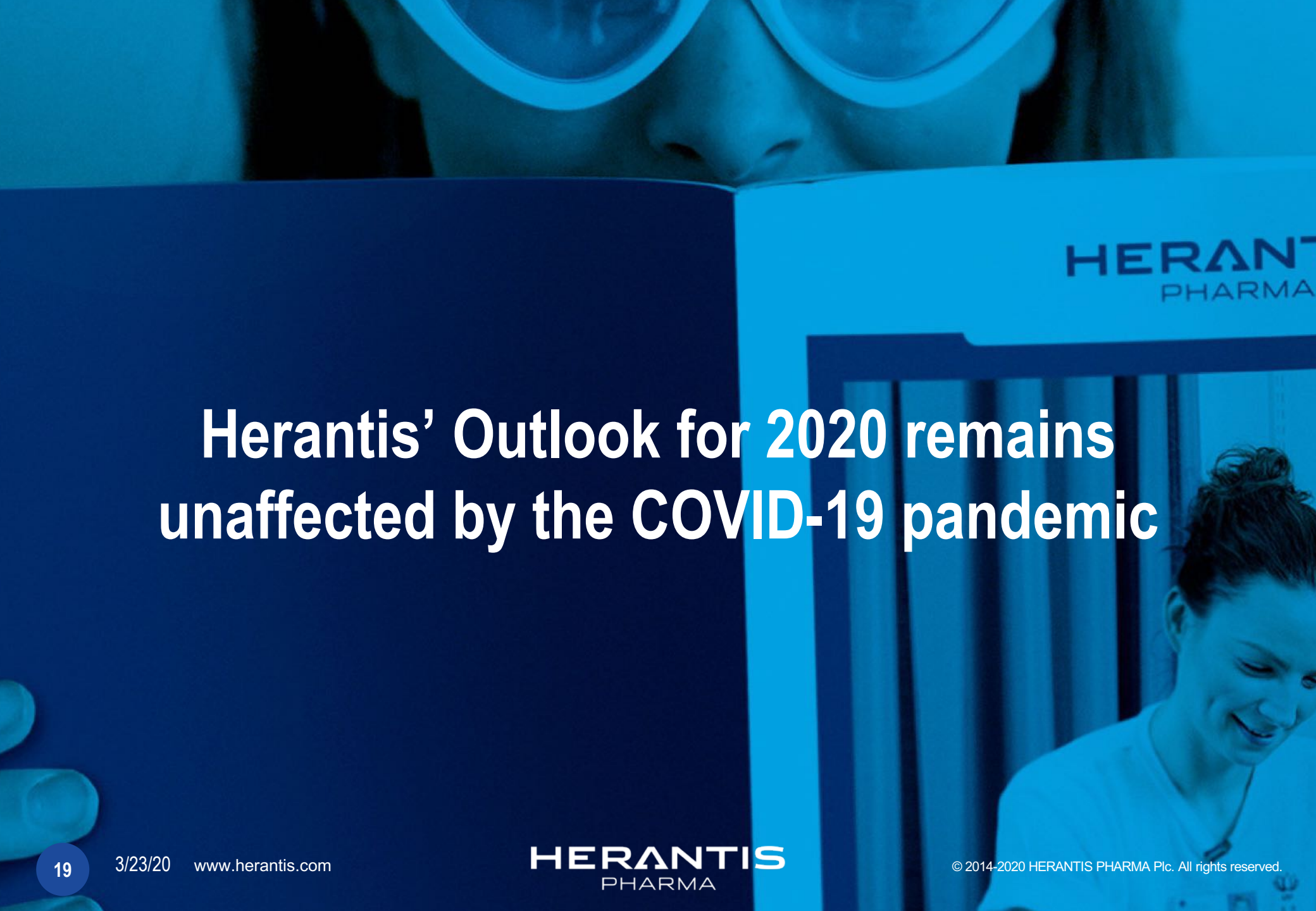
- **Phase 2 study: 39 patients randomized in Lymfactin® vs. placebo groups**
- **Topline results expected in Q1/2021 (after 12-month blinded follow-up)**
- **Primary endpoints: Efficacy in signs and symptoms of LE**

Planned next step with Lymfactin®: Pivotal Phase 3

- Tentative plan for a Pivotal Phase 3 clinical trial:
  - Target indication: Same as in the ongoing Phase 2 and previous Phase 1: Single-dose Lymfactin® as an adjunct to lymph node transplantation surgery
  - Randomization: 1:1 in Lymfactin® and placebo groups
  - Clinical sites in the US and in several European countries
  - Patient treatments to start in 2022, assuming positive Phase 2 data in Q1/2021
- Preparatory work prior to unbinding of Phase 2 clinical trial
  - Phase 3 protocol development
  - Market access: Assessment of Lymfactin® value proposal and US payer requirements
  - Regulatory discussions with FDA and selected European national regulatory authorities
  - Finalizing the commercial scale manufacturing process for Lymfactin®
- Herantis aims at rapid progress to a pivotal Phase 3 study if supported by Phase 2 results in Q1/2021

Lymphedema: Market and awareness

- 140 million LE patients worldwide
- €600M market estimated for Lymfactin® as adjunct BCAL therapy
  - Significant potential in other lymphedemas
- Lymphedema awareness increases
  - Herantis is a partner of LE&RN, international patient advocacy group
  - Hollywood superstar Kathy Bates is an active LE&RN spokesperson



Herantis' Outlook for 2020 remains unaffected by the COVID-19 pandemic

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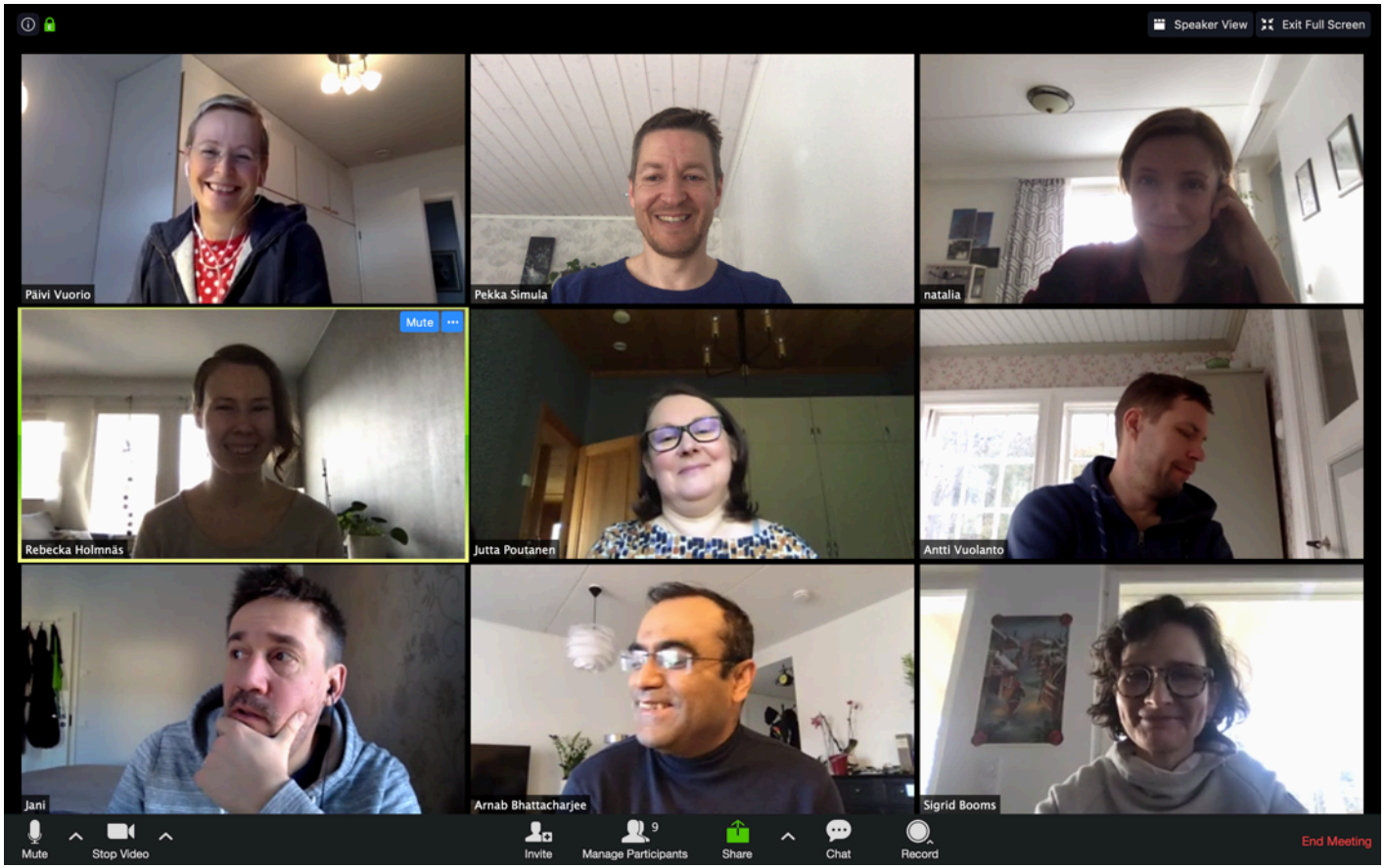
It is easy for Herantis to act responsibly under an outbreak: Working remotely is in the genes of a 'virtual biotech'

- Collaboration with international partners and subcontractors is always mainly managed remotely
- Herantis already had "Virtual morning coffee" three times a week
- Under the outbreak, with everyone working distantly, we do that every morning. Good to see colleagues every day and know they are doing well!



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Herantis' clinical studies have luckily completed almost all treatments

- Phase 2 study AdeLE: Lymfactin® in breast cancer associated lymphedema
  - All patient treatments with Lymfactin® or placebo were completed in Dec 2019
  - Study is now in the blinded 12-month follow-up until Dec 2020
  - **Little or no impact expected by the COVID-19 pandemic**
- Phase 1-2 study with CDNF in Parkinson's disease
  - At the end of March 2020, only three patients will have remaining treatments
  - Last patient treatment is scheduled for May 2020; some remaining visits are being rescheduled
  - **No material impact expected by the COVID-19 pandemic**
- Other current activities of the company involve international collaborators who could be impacted by the outbreak; however we do not expect material impact on our plans even in these:
  - Lymfactin Phase 3 preparations
  - CDNF Phase 2 preparations
  - xCDNF lead optimization

Herantis' Outlook for 2020 remains unchanged

With a **successful funding round completed** just three months ago in Dec 2019, Herantis looks forward to 2020 from a position of strength

- Herantis' long-term goal is to significantly increase its business through commercialization agreements for its drug candidates. While developing its assets, **the company continues to discuss collaboration opportunities with potential partners** for its drug development programs.
- The main objectives for 2020 are to present initial results of the Phase 1-2 clinical study of CDNF in Q1, and twelve-month follow-up results in Q3. The main objective of this first-in-human clinical study with CDNF is to demonstrate its safety in patients.
- For Lymfactin®, the Company will continue preparations for a Phase 3 clinical study while expecting Phase 2 results in Q1/2021.

Summary

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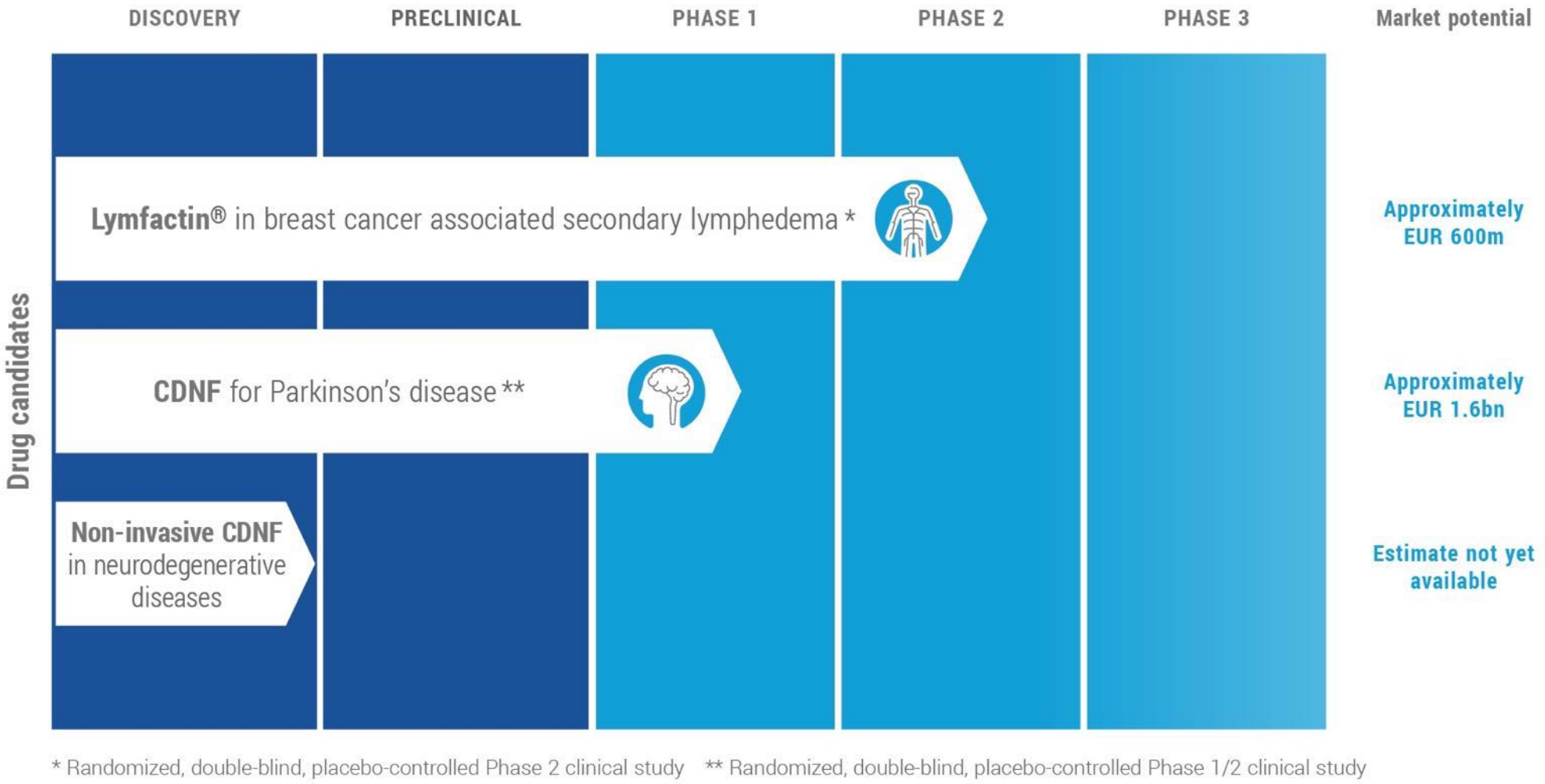
CDNF and Lymfactin® are in placebo-controlled studies that target significant unmet needs



* Randomized, double-blind, placebo-controlled Phase 2 clinical study ** Randomized, double-blind, placebo-controlled Phase 1/2 clinical study

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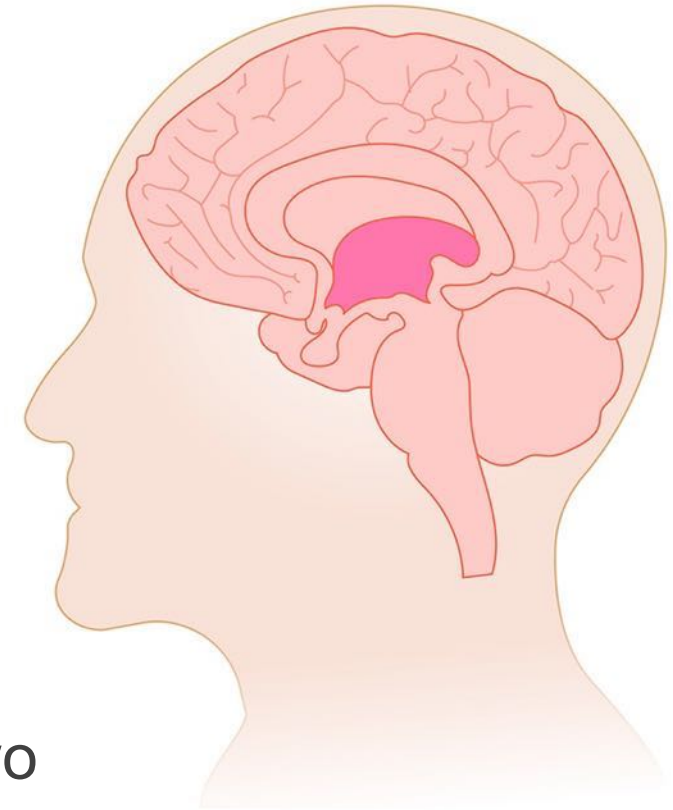
- Targeting **disease-modifying breakthroughs** in significant unmet medical needs
- Programs based on internationally renowned science published in Nature and Science
- Approaching important milestones in two **randomized clinical studies**



Thank you

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