



# Toward clinical breakthroughs based on leading science

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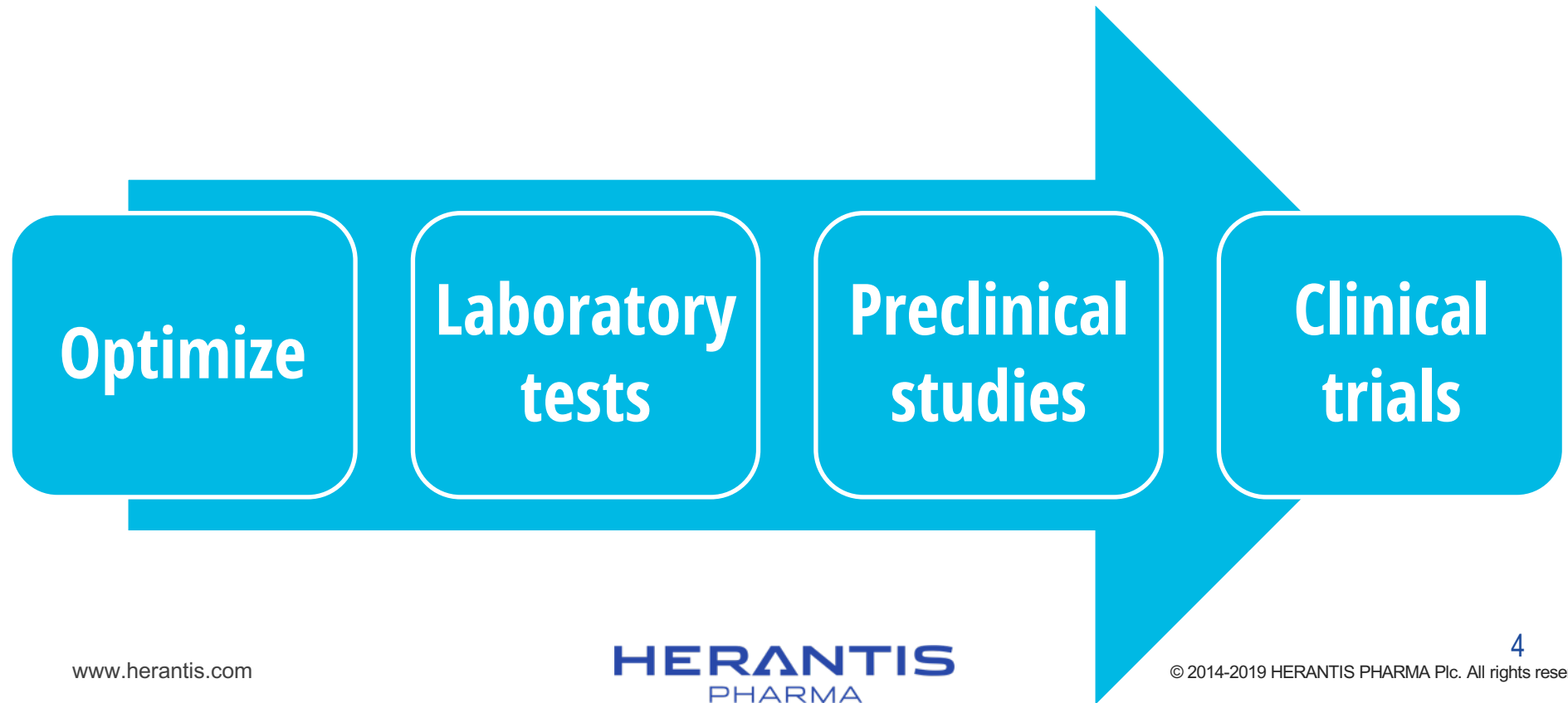


# Where do pharmaceuticals come from?

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# Novel drugs are based on science

- Scientific discovery on disease mechanisms; or
- Novel molecule, which may be clinically relevant





# Herantis' drug development strategy



# Herantis Pharma på svenska



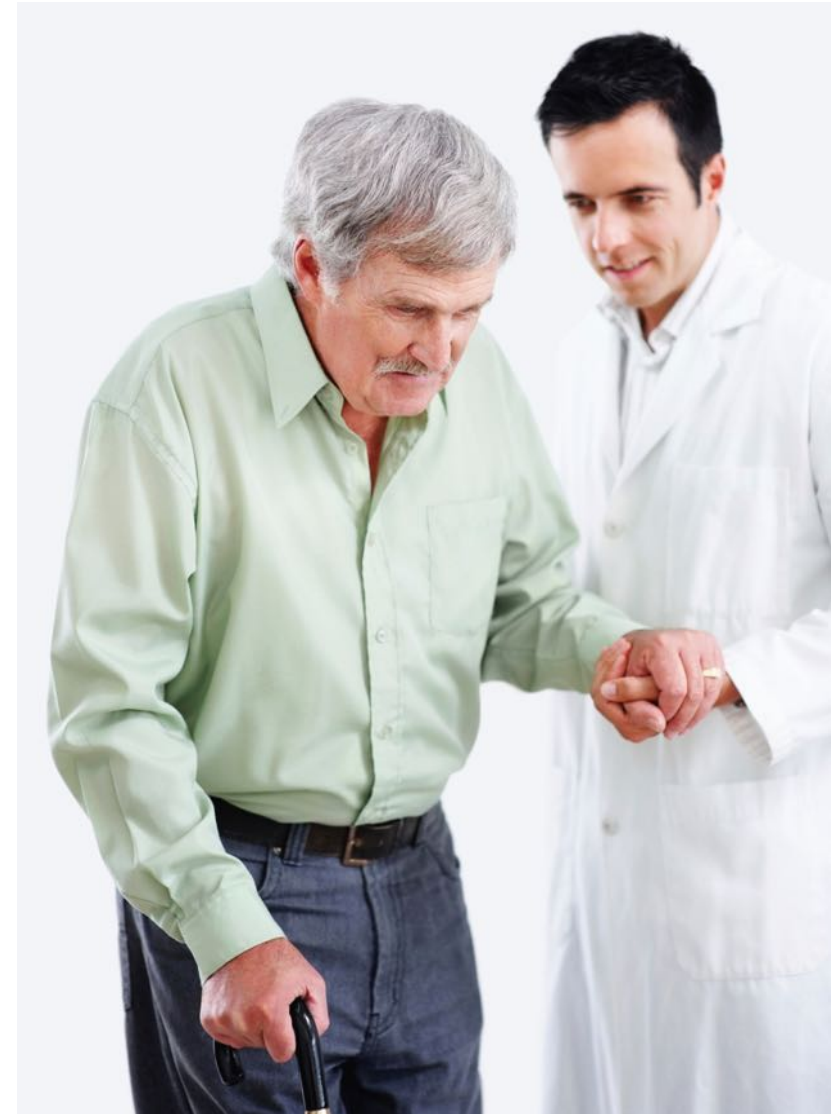
- Herantis Pharma är ett innovativt läkemedelsutvecklingsbolag med inriktning mot **regenerativ medicin** med två proprietära läkemedel i kliniska tester:
  - CDNF mot Parkinsons sjukdom: ämnar att **stoppa sjukdomens utveckling**
  - Lymfactin® mot sekundär lymfödem: världens första och enda genterapi i klinisk testfas (fas II) som **reparerar skador på lymfsystemet**
- Båda är baserade på världsledande medicinsk forskning
- Herantis Pharmas aktie är noterad på Nasdaq First North Helsingfors
  - Vi planerar att notera vår aktie på **First North Stockholm** under 2019



# Neuroprotective factor CDNF for stopping the progression of Parkinson's disease

# Parkinson's disease (PD)

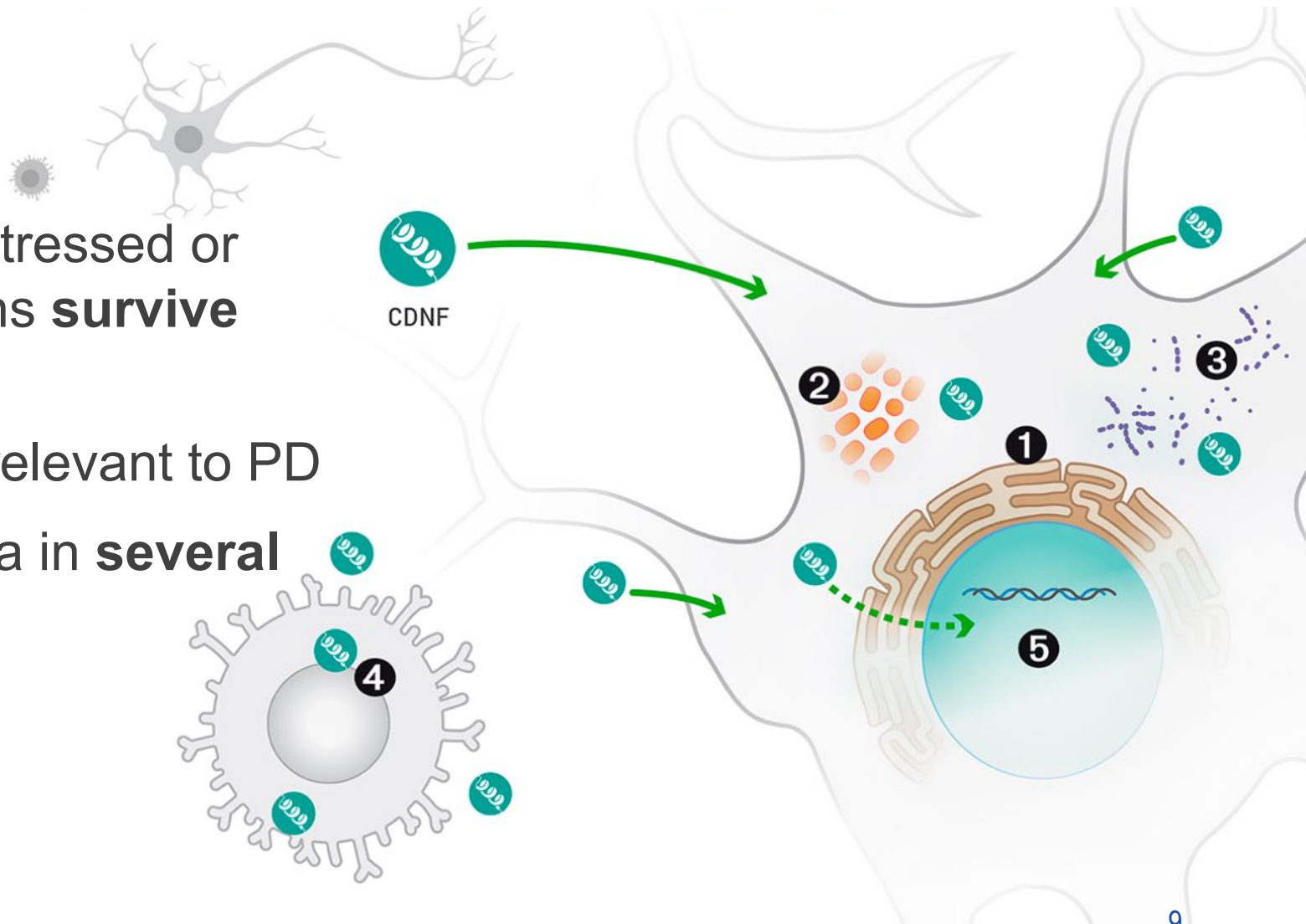
- Progressive neurodegenerative disease impacting 7-10 million people
- Estimated annual financial burden of PD is **\$50 billion**
- L-dopa, a standard-of-care, has been used since 1960's!
- Known therapies only alleviate motor symptoms; Herantis' CDNF aims to also **stop disease progression**



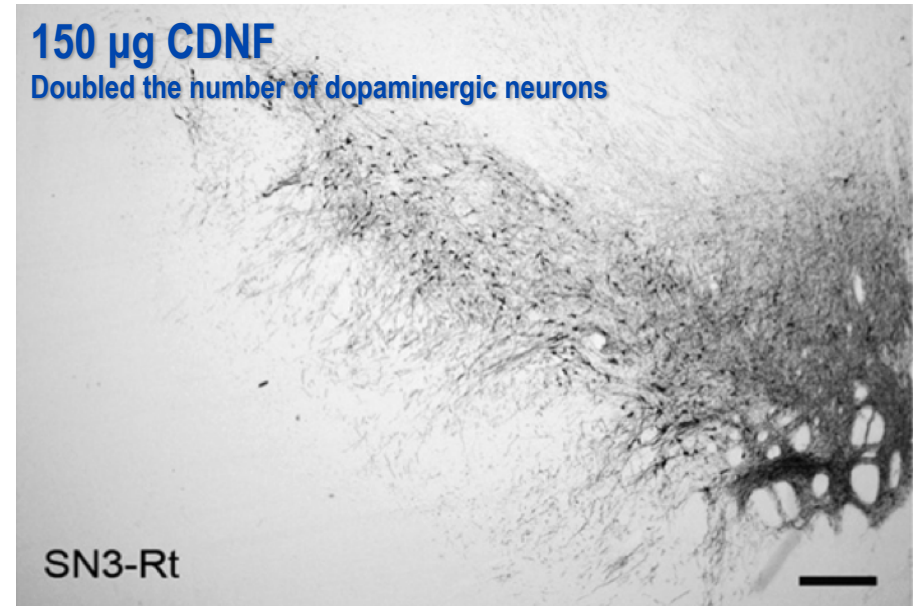
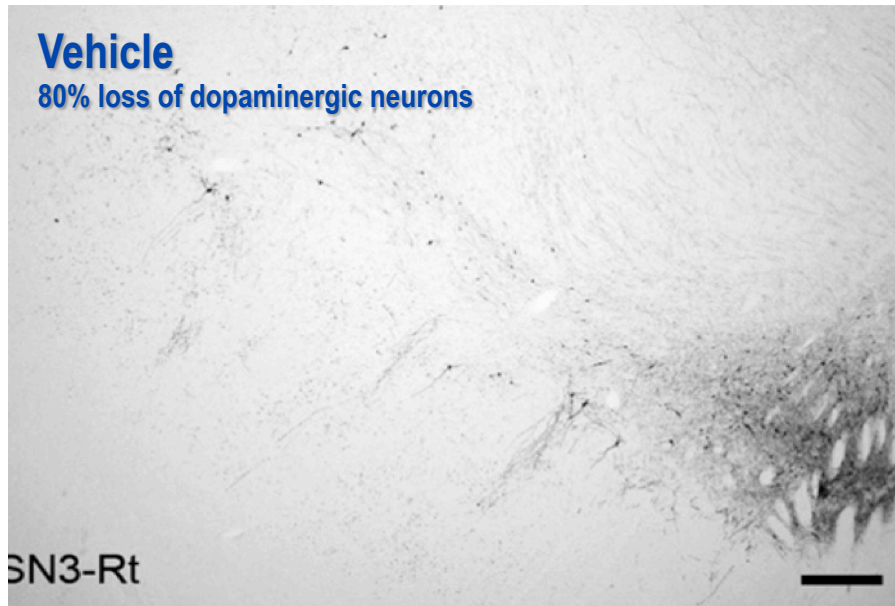


# CDNF's natural role is to help neurons survive

- CDFN helps stressed or injured neurons **survive and recover**
- Mechanisms relevant to PD
- Promising data in **several neurological diseases**



# CDNF doubled the number of neurons in a PD model\*



- Disease model: Severe parkinsonism in aged Rhesus monkey
- Three monthly CDFN doses **doubled the number of neurons**
- Significant improvement in gross motor function, fine motor function, and **for the first time in the world**, also in non-motor symptoms

# CDNF may change how patients live with PD

- Currently in Phase 1-2 clinical study funded by European Union:  
“**Leading science, greatest potential** to advance clinical practice”



Karolinska  
Institutet

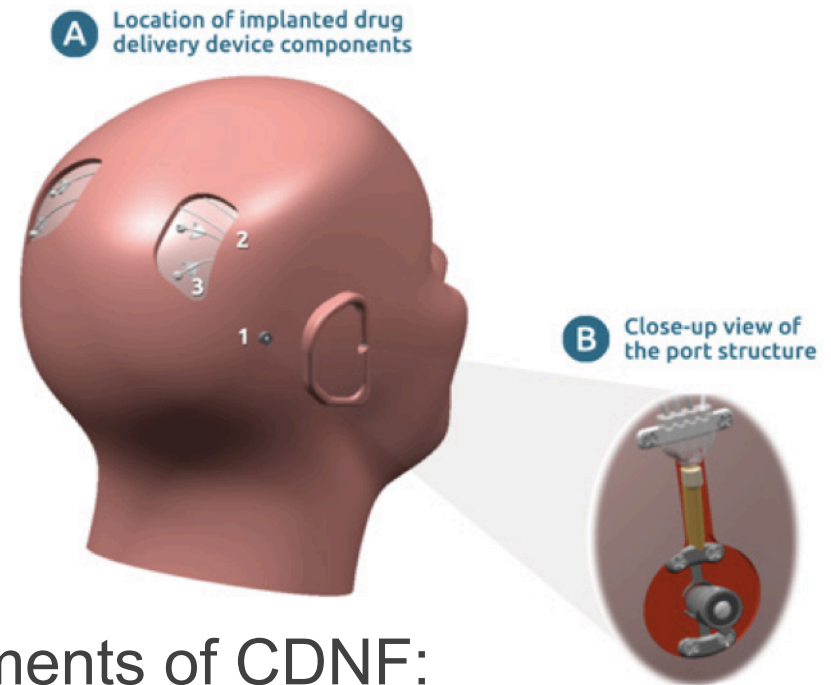
KAROLINSKA  
UNIVERSITETSSJUKHUSET



- Study fully recruited: 17 patients randomized in CDNF vs. placebo groups
- Topline results expected by end of 2019
- First-in-human study in late-stage PD patients → Primary endpoint is safety

# Next generation: xCDNF

- Common challenge in brain diseases is drug delivery in the brains → CDFN is dosed with sophisticated medical device
- We have shown that certain fragments of CDFN:
  1. Retain its biological activity (comparable efficacy in PD models)
  2. Reach the brain with systemic dosing → **much simpler administration**
  3. Have potential in several indications beyond PD: E.g. Alzheimer's, ALS, stroke



➤ Based on current data xCDNF could be administered as easily as insulin





# Lymfactin® gene therapy for curing secondary lymphedema

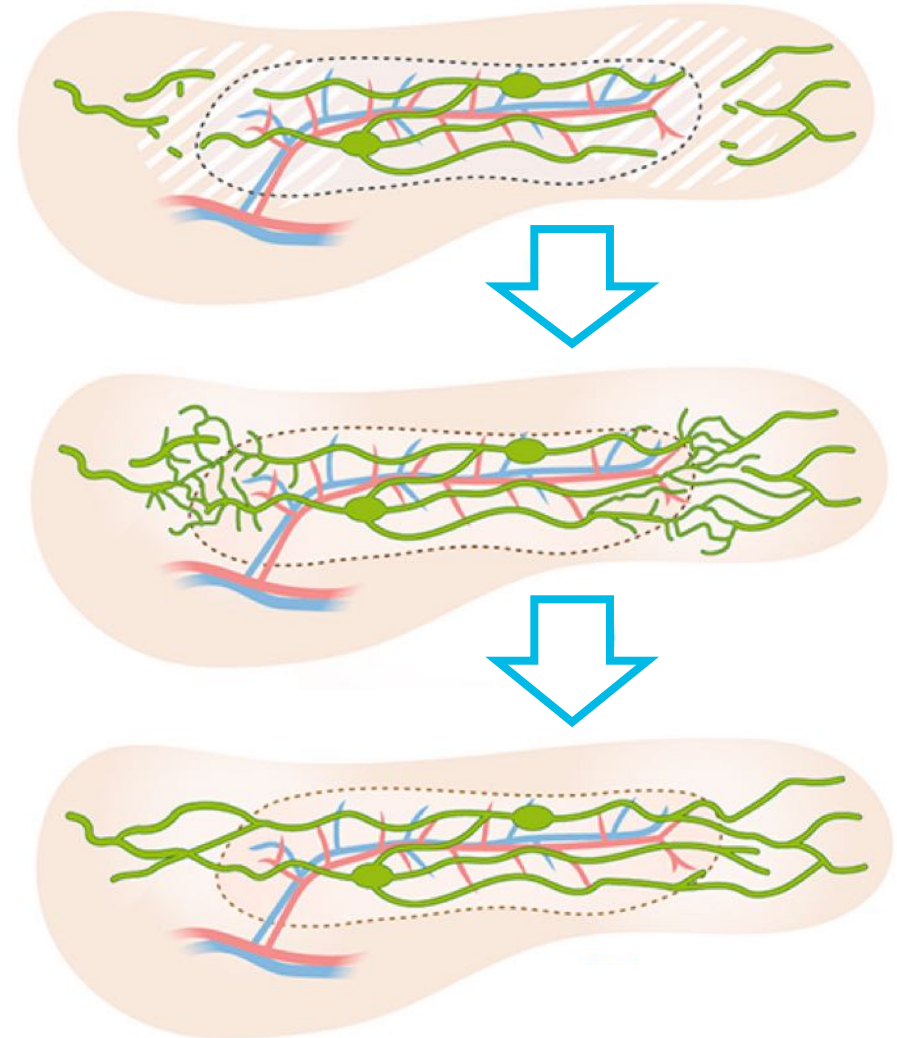
# Secondary lymphedema

- Lymphedema (LE) is chronic, progressive swelling due to accumulation of lymph
  - Disabling and disfiguring disease
  - No approved drugs for treatment
- Herantis' Lymfactin® is a gene therapy that aims to **repair the lymphatic system**



# Lymfactin® aims at reconstituting the lymphatic system

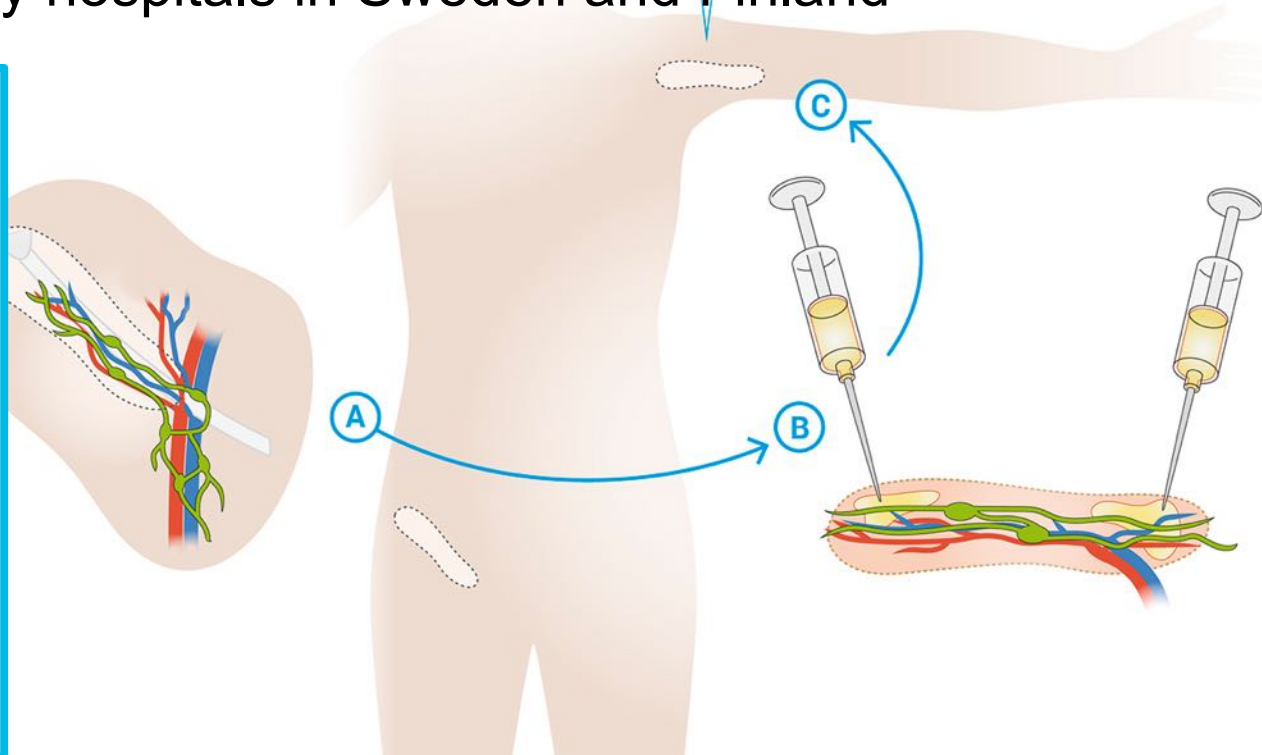
1. A single Lymfactin® injection results in local VEGF-C expression for about 2 weeks
2. VEGF-C is the natural human protein that promotes the growth of lymphatic vessels
3. Functional lymphatic system is reconstituted



# Lymfactivin® is in Phase 2 clinical studies

- Actively recruiting patients with **breast cancer associated LE** who are undergoing lymph node transplantation as an attempt to relieve symptoms
- Study centers: 5 university hospitals in Sweden and Finland

- Target: 40 patients randomized in Lymfactivin® vs. placebo groups
- Topline results expected by end of 2020 (12-month follow-up)
- Primary endpoints: Efficacy in signs and symptoms of LE

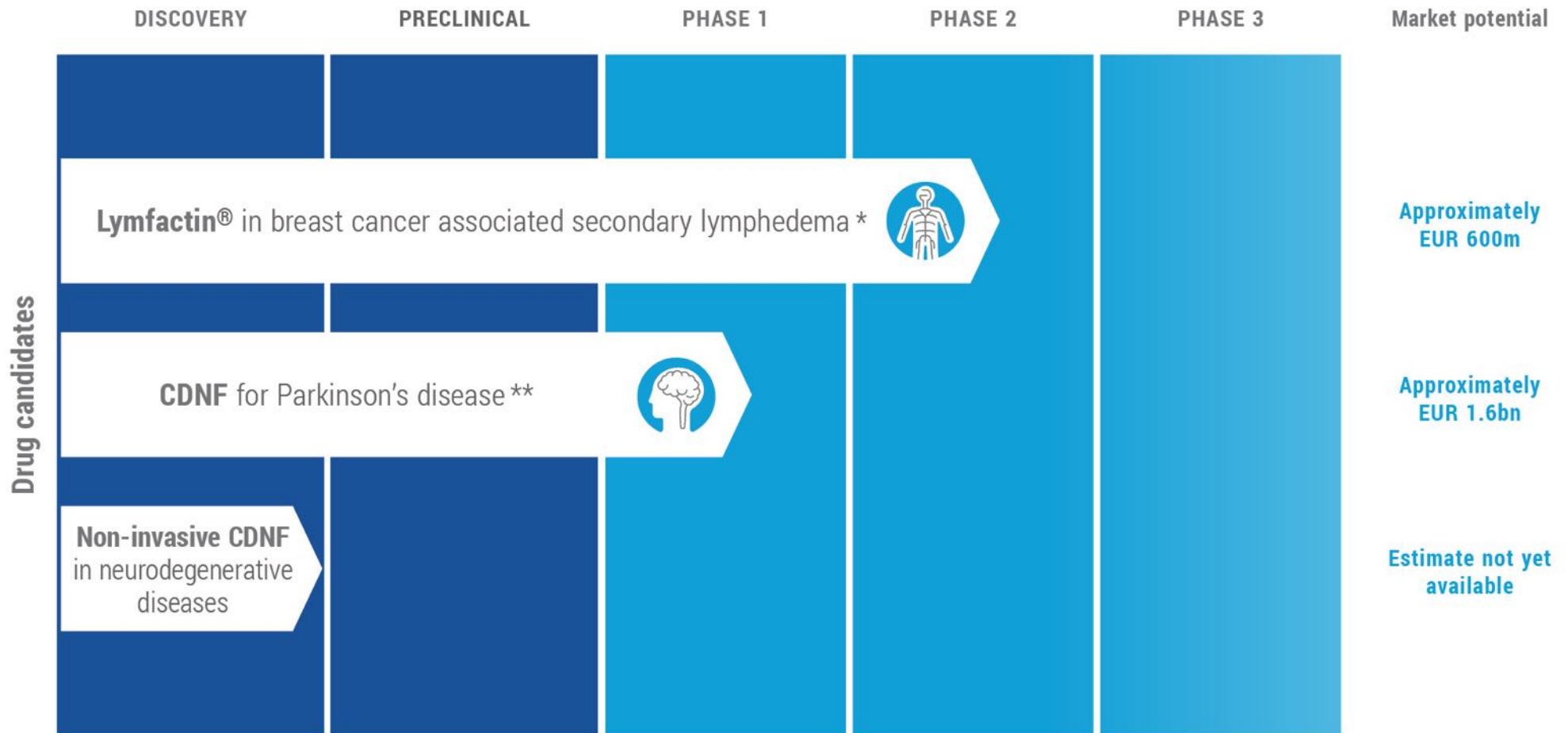




A woman with long hair is shown in profile, blowing a dandelion seed. The background is a soft sunset with warm colors. The entire image has a blue color overlay.

# Summary

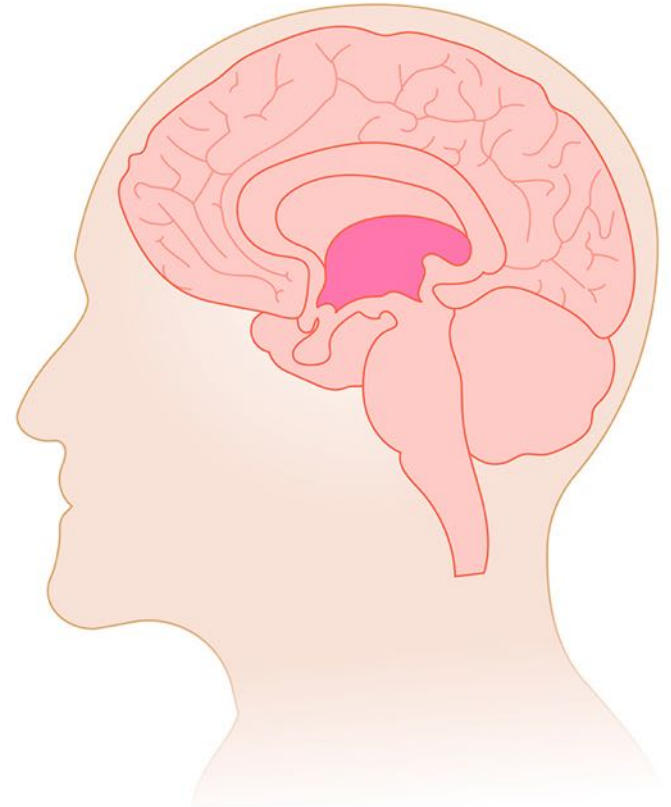
# CDNF and Lymfactin® are in placebo-controlled studies that target significant unmet needs



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

# Herantis Pharma

- Targeting disease modification in significant unmet medical needs, **large and well-defined markets**
- Programs based on internationally renowned science published in Nature and Science
- Funded to **reach unblinding** in two randomized clinical studies
- Considering possible dual listing in **First North Sweden** in 2019



# About Herantis' management and shareholders

- International and experienced Board of Directors
- Herantis' management has actively purchased shares both from the market and participated in share issues
- All insider trading published on the company's website
- Cornerstone investor in last funding round (3/2019) was Swedbank Robur's fund, Medica





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PHARMA

**Thank you**

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