

Q4 2014 Headlines

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NattoPharma ASA

4th Quarter 2014

CEO Hogne Vik

26th of February 2015

Disclaimer

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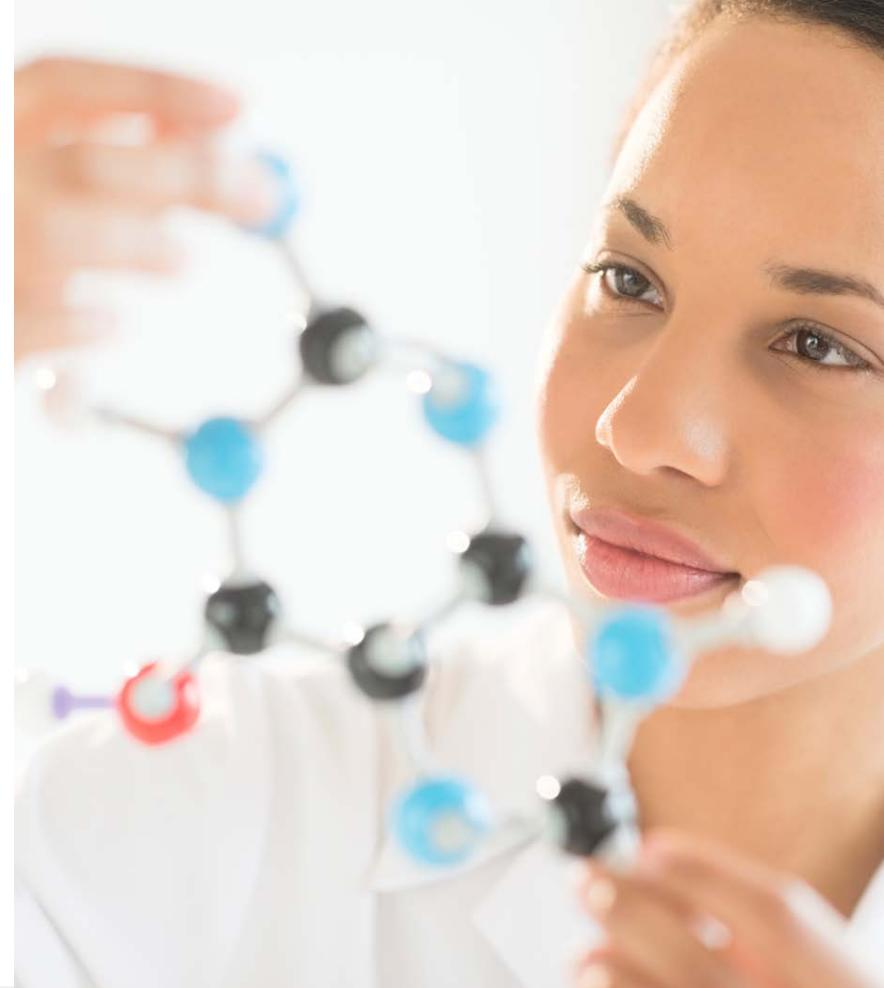
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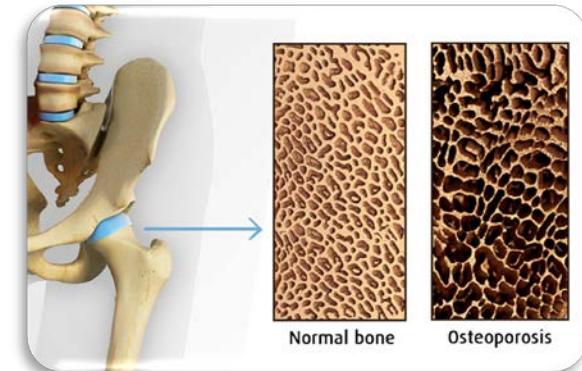
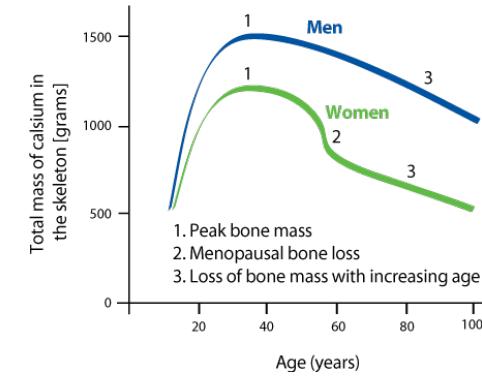
- New record quarter - Revenues + 120 %
- Pharma development before schedule
- First industrial batch of Mena Q7 PURE delivered
- Cardiovascular part of 3-year study
- Preparation for dual listing

Introduction



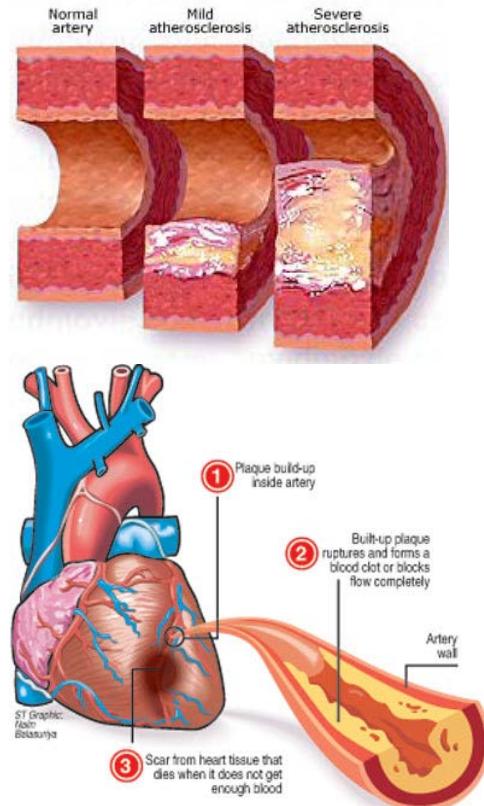
Age-related bone loss and osteoporosis

- Bone mass peaks around the age of 30-40. Thereafter, it drops gradually with increasing age.
- Postmenopausal women are particularly exposed to age-related bone loss and subsequent risk of osteoporosis.
- Osteoporosis affects 75 million people in Europe, US and Japan.
- 45% of women and 20–25% of men over the age of 50 will experience fractures.



Vascular calcification

- Cardiovascular disease is the most common cause of death in the Western world.
- Excess calcium builds up in the vessel walls, causing stiffening of the walls and build-up of plaque in the arteries.
- Arterial constrictions in the body cause increased blood pressure , increased workload for the heart and may end in chronic heart failure.
- Constrictions of the coronary arteries cause reduced blood supply to the heart and may lead to coronary infarction.



The connection: Calcium

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Osteoporosis



Not enough calcium
in the bones

Vascular calcification



Too much calcium
in the vessel walls

«The calcium paradox»

The solution: Vitamin K2 as MK-7 (MenaQ7™)

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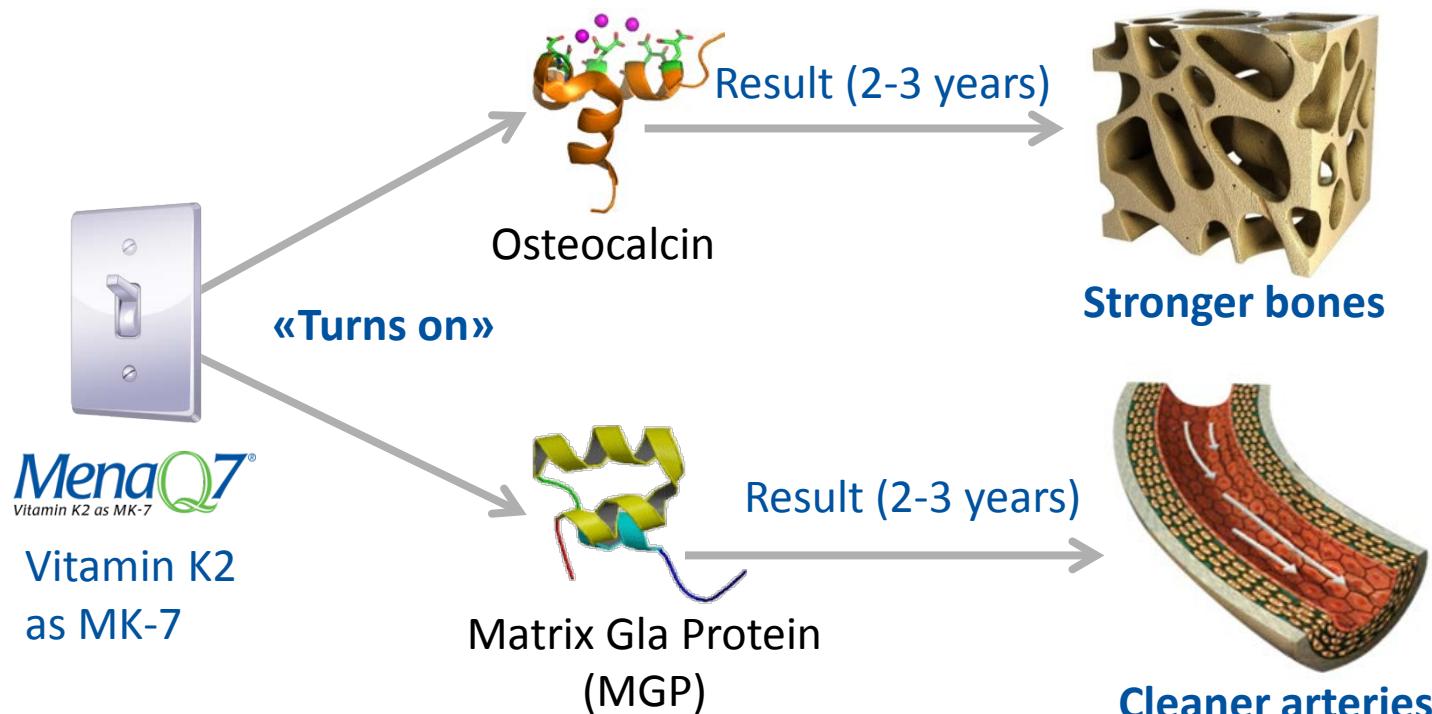
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Income statement

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M NOK	2014	Q4 2014	2013	Q4 2013
Sales Revenue	25,5	10,7	16,4	4,9
Operating Expenses	-49,5	-15,9	-27,2	-7,1
EBITDA	-18,5	-3,7	-10,0	-1,6
Net Financials	2,1	1,8	11,2	12,0
Net Earnings	-21,2	-3,2	0,4	9,9

Revenues

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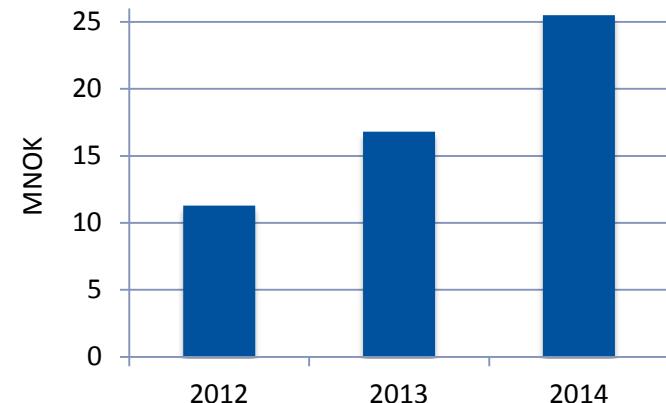
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Moving average - last four quarters



Yearly sales



Operating costs

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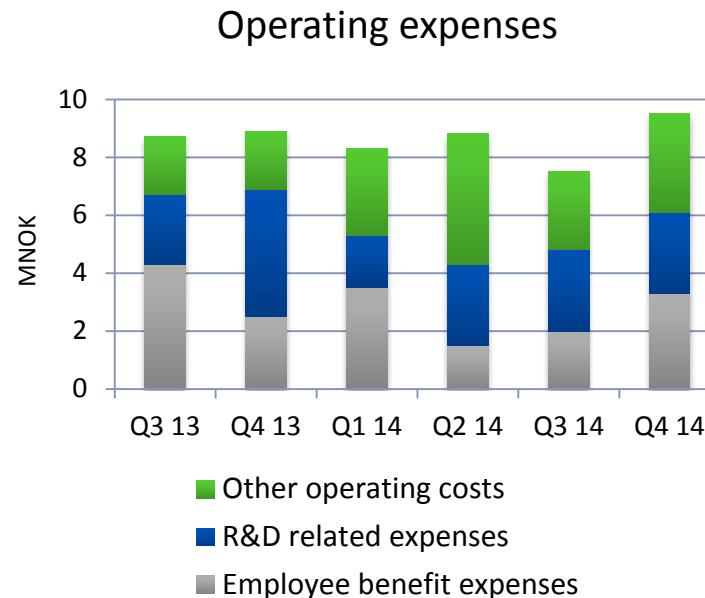
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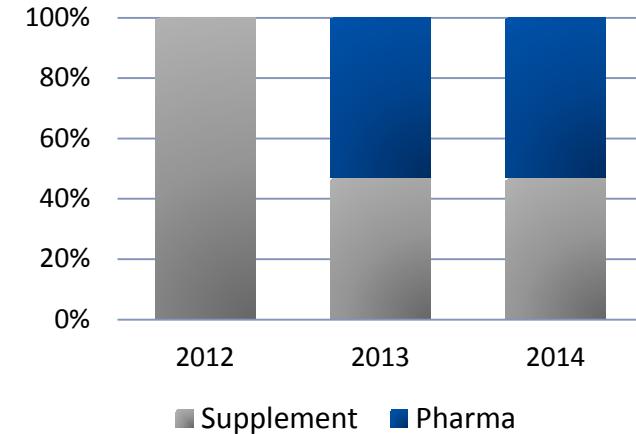
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Distribution of expenses



Cash flow

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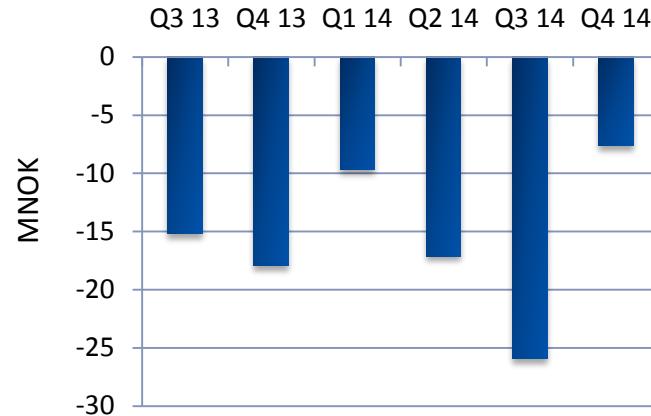
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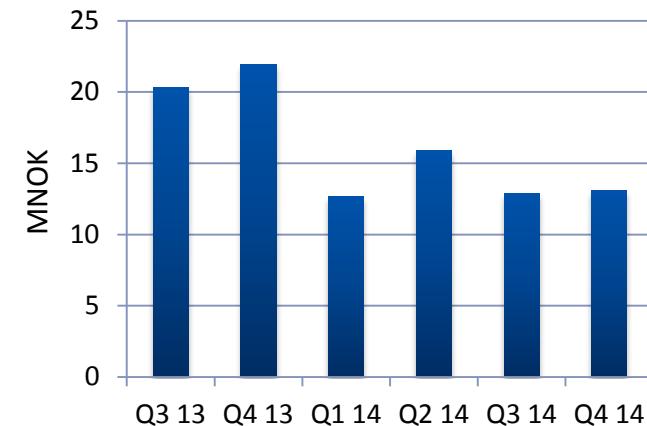
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Cash flow from operating activities



Cash position



Sufficient cash for the next 6–12 months

Production



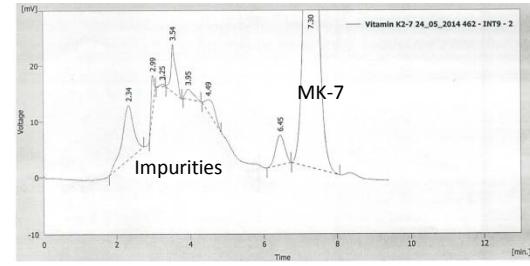
MenaQ7 PURE – Pure and cost-effective

- MenaQ7 PURE - upscaling of production to industrial batches has been successfully completed (Q4 2014)
- The switch to MenaQ7 PURE will significantly improve NattoPharma's gross margins

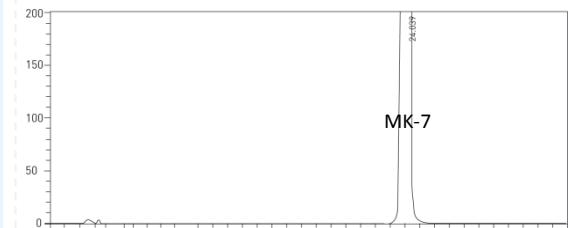
MenaQ7 PURE

- **98 % pure, Pharma Quality**
- **100 % All-trans, the only in the World.**
- Produced under **100 % Pharma** controlled conditions
- **No unknown** residues
- Clinical documented
- Developed and produced by NattoPharma 100%

Comparison by HPLC:



Competing product



MenaQ7®
Vitamin K2 as MK-7

MenaQ7 PURE - Status industrial process

- Successful industrial up scaling in Q4 2014, in ton scale
- First supply of industrial scale delivered in beginning of 2015
- The next planned batch will be multiple times larger and will be finished in April 2015
- In 2nd half of 2015 the batches increase further
- In 2016 NattoPharma can supply the expected demand in the Western population – if required

Science & Patents



The Rotterdam Study - The Importance of Vitamin K2

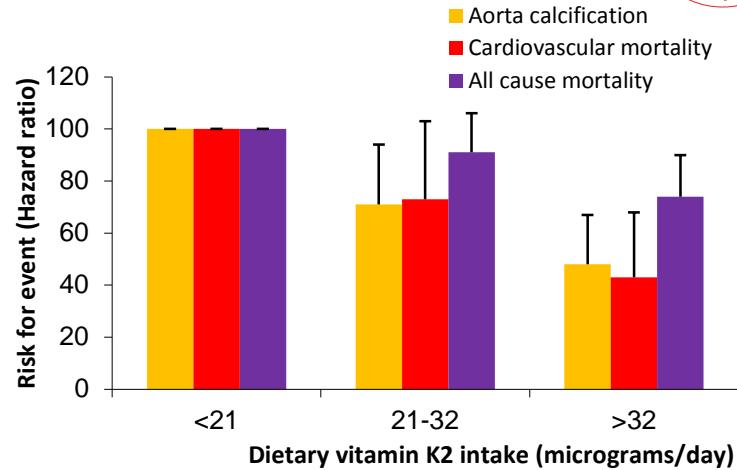


- Prospective population study
- Over 4.800 people, healthy 55 years and older
- 10 years follow-up Cross-sectional analysis

Population group with calculated intake of more than 32 micrograms of K2/day

50% reduction of arterial calcification
50% reduction of cardiovascular death
25% reduction of all cause mortality

Geleijnse et al., American Society for Nutrition (2004)



Follow up study:

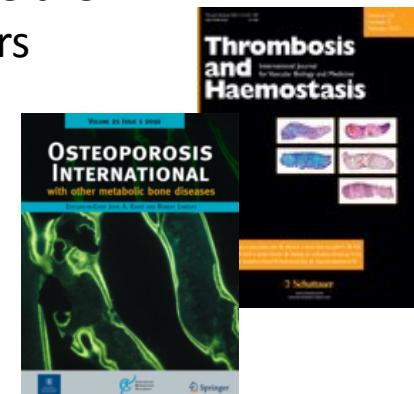
16,000 persons (aged 49-70) for every 10 µg increase in ingestion of vitamin K2 (higher menaquinones) the cardiovascular disease risk decreases by 9%.

Gast et al., Nutrition, Metabolism & Cardiovascular Diseases (2008)

«The 3-year studies»

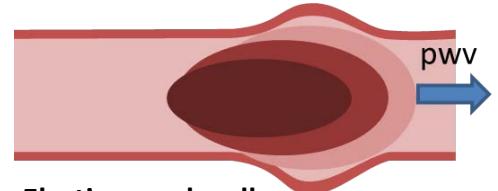
NattoPharma funded two combined large clinical studies to explore and document the bone and cardiovascular effects of daily intake of MenaQ7:

- Performed by scientist at the University of Maastricht observing all regulations for clinical studies and working under full academic independence
- Double blinded and randomized intervention study with either 180 micrograms per day of MenaQ7 or placebo for 3 years
- 244 participants (the same as a good size phase II study)
- Published in the prestigious peer reviewed journals:
 - Bone: *Osteoporosis International* (2013)
 - CVD: *Thrombosis and Haemostasis* (2015)

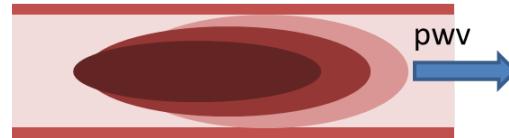


Elasticity and pulse wave velocity

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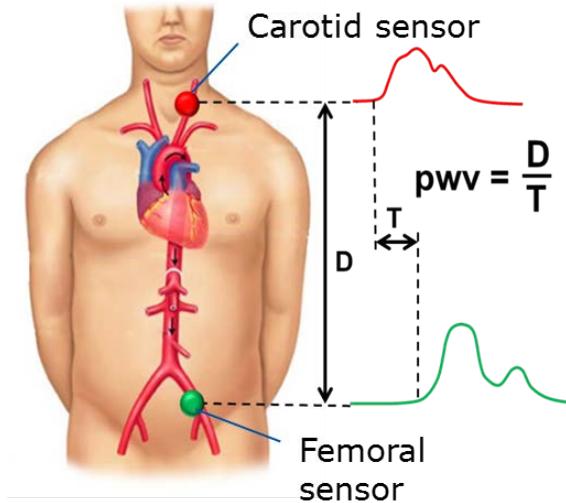


Elastic vessel wall
= larger effective cross section
→ lower pressure and slower flow
= **lower pulse wave velocity (pwv)**



Stiffer (calcified) vessel wall
= Smaller effective cross section
→ higher pressure and faster flow
= **higher pulse wave velocity (pwv)**

Stiffer, calcified, vessel walls tends to higher pulse wave velocity.



Pulse-wave velocity (PWV) as a marker for arterial stiffness

The passing of the systolic rise of the pulse wave is measured in two standardized places using ultra sound and the velocity of the wave (pulse wave velocity) is then calculated.

What we hoped and expected

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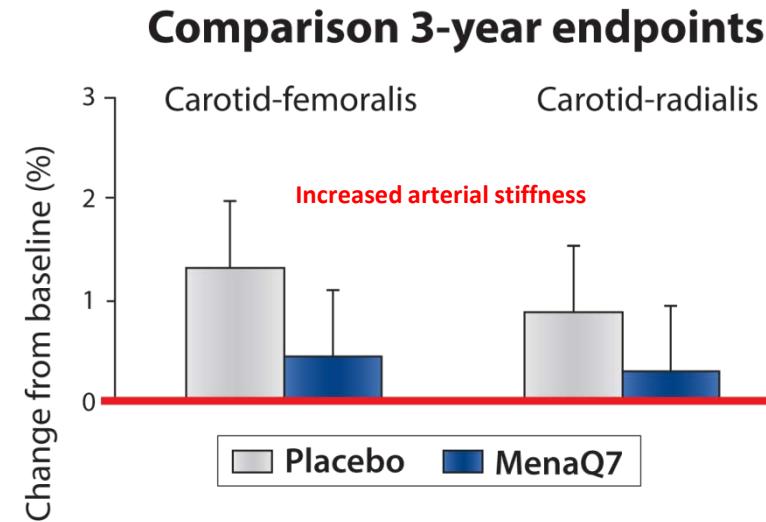
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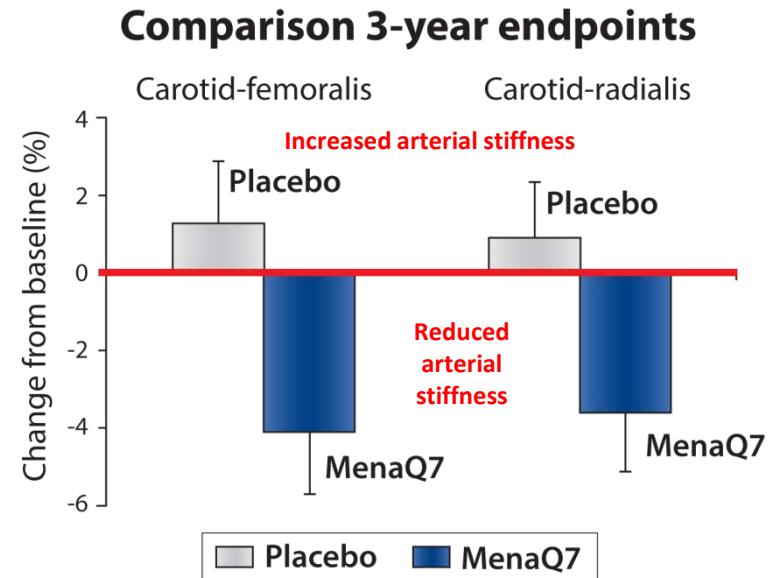
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Based on previous knowledge, we hoped and expected to see a significant slow-down of the development of arterial calcification after 3 years of supplementation with MenaQ7.

The “3-year” study – heart health results

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After 3 years of daily supplementation with 180 mcg MenaQ7, the MenaQ7 group had on **average a reduction in pwv corresponding to around 3 times the normal age related increase in the placebo group.**

This is the first time ever that any substance has been shown to reverse arterial stiffness. No existing drug can do this.

NattoPharma's patent portfolio

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Description of patent	Filed	Status in Europe	Comments / NP patent status outside EU
Use of K2 in food products for promoting bone and CV health.	20-04-2001		Granted in US Granted in Canada Granted in India
Compositions with vitamin K for treating or preventing CV disease.	01-09-2003	Granted in 17 EU countries	Pending status in US
The use of vitamin K for reversing calcification.	06-06-2006	Granted in 19 EU countries	
Covers all use of Vitamin K2 in food, dietary supplements and pharma products – in the CV area.	24-04-1995	Granted in Germany, Belgium, France, UK and the Netherlands.	Granted in Japan
Omega-3/krill oil/Vitamin K2 patent.	13-07-2007	Pending	Granted in: New Zealand and Australia Notice of allowance in Canada; Pending status in US, Japan, and China
Process for preparation of MK-7 type of vitamin K2 (synthesis)	11-10-2013	Published	Pending status globally
Use of vitamin K for weight maintenance and weight control *(part of the Vita-K agreement)	19-12-2011	Published	Pending status globally

Products & Markets



Product strategy

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	2014		2015+
Dietary Supplement	Functional Food	Medical Food	Pharma-ceutical
MenaQ7 MenaQ7 Crystals MenaQ7 PURE	MenaQ7 MenaQ7 Crystals MenaQ7 PURE	MenaQ7 Crystals MenaQ7 PURE	Pharma Grade MK-7



SUPPLEMENTS



FUNCTIONAL FOODS



MEDICAL FOODS



PHARMACEUTICAL

- **MenaQ7** has been on the market **since 2006**
- **New MenaQ7 crystals** product launched **in 2012**
- **New synthetic MenaQ7 PURE** launched **in 2014**
- Ready for inclusion in **composite formulations** and **enriched food**

Top 12 ingredients in US supplement market

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Figure 4-27 Top 100 Dietary Supplements According to U.S. Sales, 2004-2010: Part I

Supplement	2004	2005	2006	2007	2008	2009	2010	'10 Growth
1 Multivitamins	3,828	4,140	4,322	4,492	4,684	4,799	4,949	3.1%
2 Powders/Formulas	1,853	1,935	2,053	2,218	2,379	2,507	2,751	9.7%
3 B Vitamins	878	937	998	1,039	1,137	1,218	1,316	8.0%
4 Calcium	993	1,010	1,007	1,056	1,117	1,175	1,213	3.3%
5 Fish/Animal Oils	272	379	526	695	833	976	1,086	11.2%
6 Vitamin C	806	836	864	880	900	969	966	-0.4%
7 Homeopathics	549	649	710	781	795	872	900	3.3%
8 Glucosamine/Chondroitin	749	795	803	831	838	803	774	-3.6%
9 Probiotics	205	243	301	366	425	527	626	18.9%
10 Vitamin D	44	51	72	108	234	425	551	29.6%
11 CoQ10	286	343	381	413	436	450	480	6.8%
12 Magnesium	175	202	240	270	309	341	379	11.1%

- Granted cardio-health claim in the US in 2000;
- 100s of positive articles and studies help fuel increasing consumer awareness;
- Values move to higher concentrate, higher priced products

- Vitamin D gaining recognition via 100s of studies and building consumer awareness;
- 2009 specific link with vitamin D deficiencies, and negative impacts
- Gains support of noted medical "personalities"

- More of a steady growth with continuing support from medical community (including a recent book published by Dr. Goodman)

- Overall market growth has averaged approximately 7% per year
- Europe tends to average slower growth, with China accelerating in recent years

Source: Nutrition Business Journal
Data is US Consumer-level sales

«Vitamin K2, the new vitamin D»

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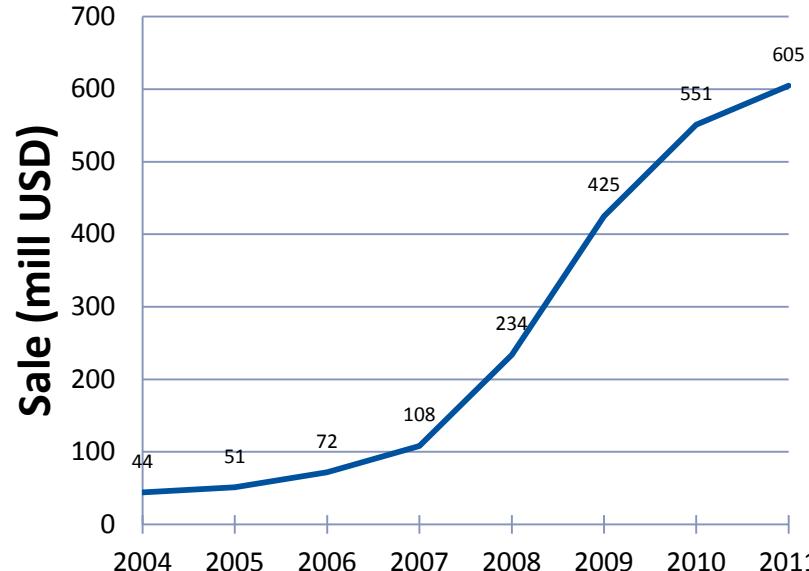
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Sales of vitamin D in the US market



Source: Nutrition Business Journal

Vitamin K: This Could Be Even BIGGER Than the Vitamin D Discovery...

August 26, 2010 1,154 views

By Dr. Mercola

Vitamin K may very well be "the next vitamin D" as research continues to illuminate a growing number of benefits to your health. It is probably when Vitamin D was ten years ago with respect to its appreciation as a vital nutrient that has far more benefits than was originally recognized. And, according to Dr. Cees Vermeer, one of the world's top researchers in the field of Vitamin K, nearly everyone is deficient in Vitamin K – just like most are deficient in D.

Vitamin K measurements in blood plasma can be done as quickly, but the results are not nearly as helpful because they mainly reflect what you ate yesterday. Because of this, we will have to begin to look at what people eat that may be too deficient to affect all of its health profiles. Vitamin K researchers across the world will acknowledge him as a leader in this field.

Most people get enough Vitamin K from their diet, but not enough from the list is growing:

- Arterial calcification, cardiac
- Osteoporosis
- Prostate cancer, lung cancer
- Brain health problems, including Alzheimer's

There's a New K in Town - Could K2 be the next vitamin D?

Written by: Lindsay Wilson
Published in: Health Hotline
Posted on: 07/29/2013 - 1:23pm

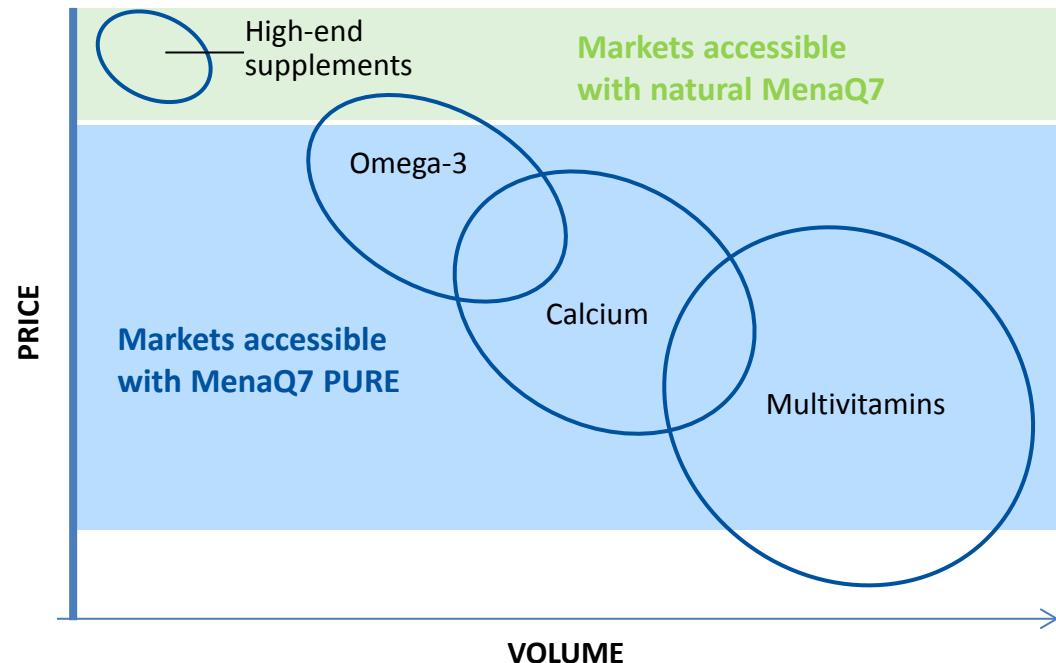
Printer-friendly version

A decade ago, no one gave Vitamin D much thought – it was added to milk to help build strong bones, end of story. But it wasn't long before Vitamin D burst onto the scene as one of the most important nutrients for human health, with research discovering it played a role in almost all aspects of health including heart health, brain health, immunity, and helping to prevent certain cancers and other degenerative diseases. And when Vitamin D testing became ubiquitous, it was discovered that most of us were deficient in this important vitamin, leading to a surge in supplementation.

MenaQ7 – opening new market segments

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- Existing vitamin K2 products are expensive.
- MenaQ7 PURE **opens multi-vitamin market** and functional foods.
- Opens up **new opportunities** to include MK-7 in omega-3 products and other dietary supplements.



Global presence and marketing

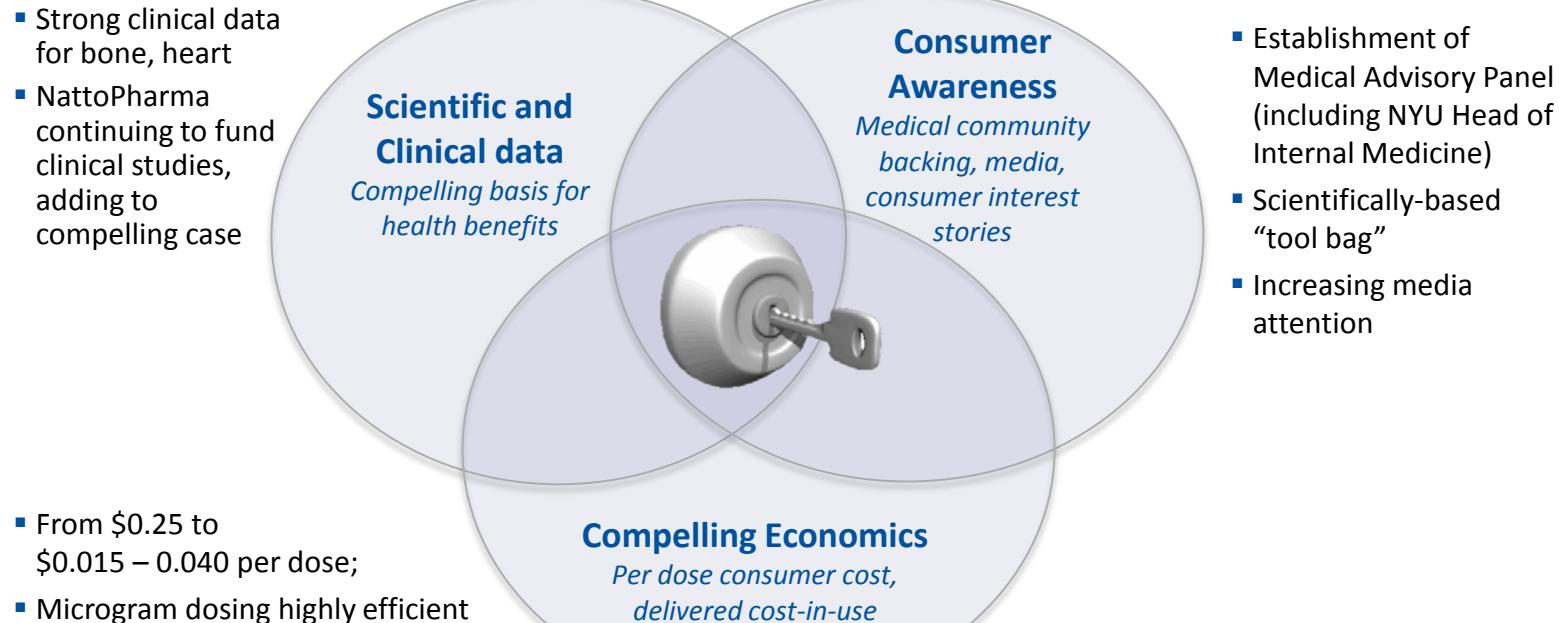
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Three Elements Converging to Unlock Value

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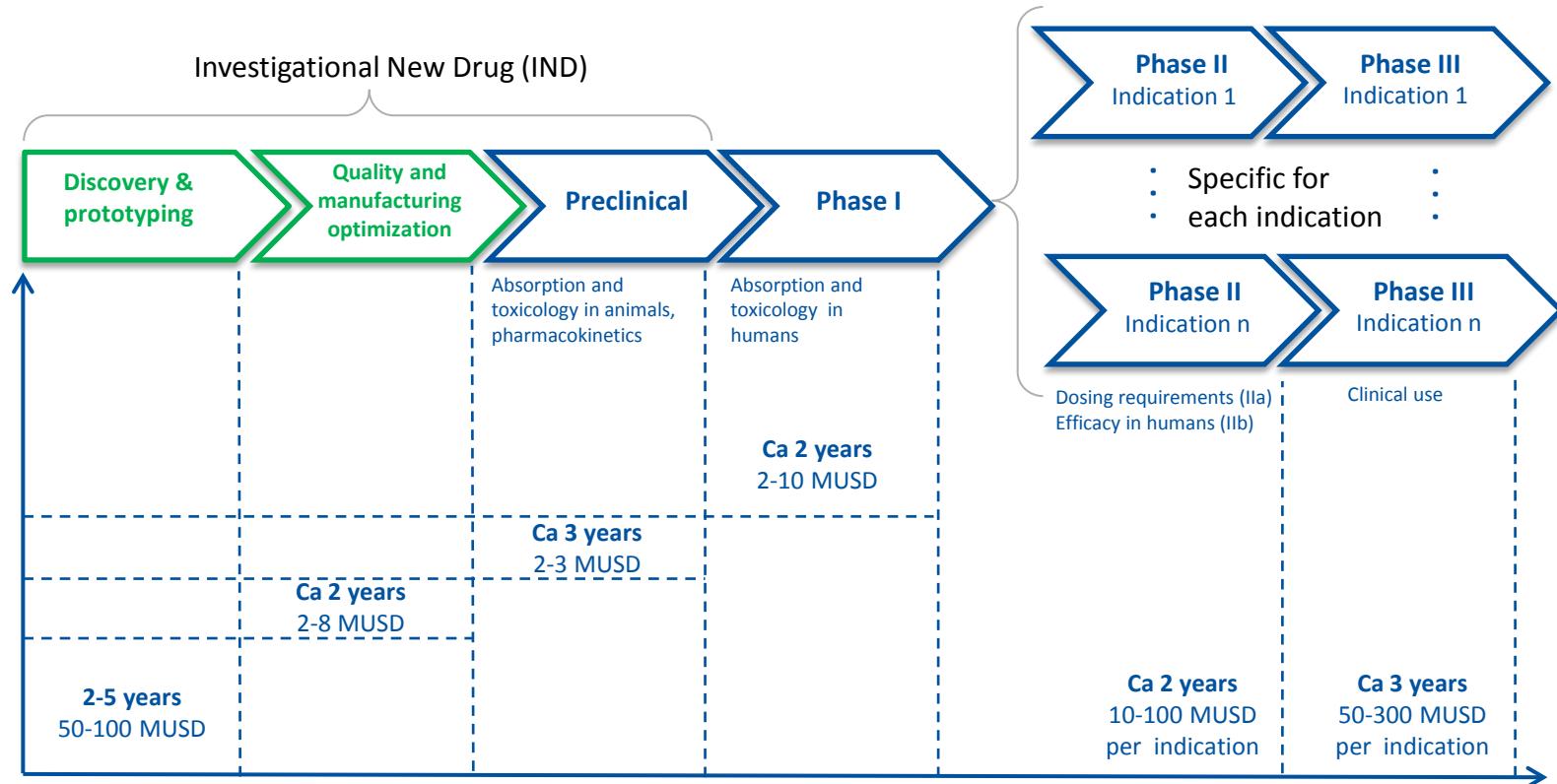


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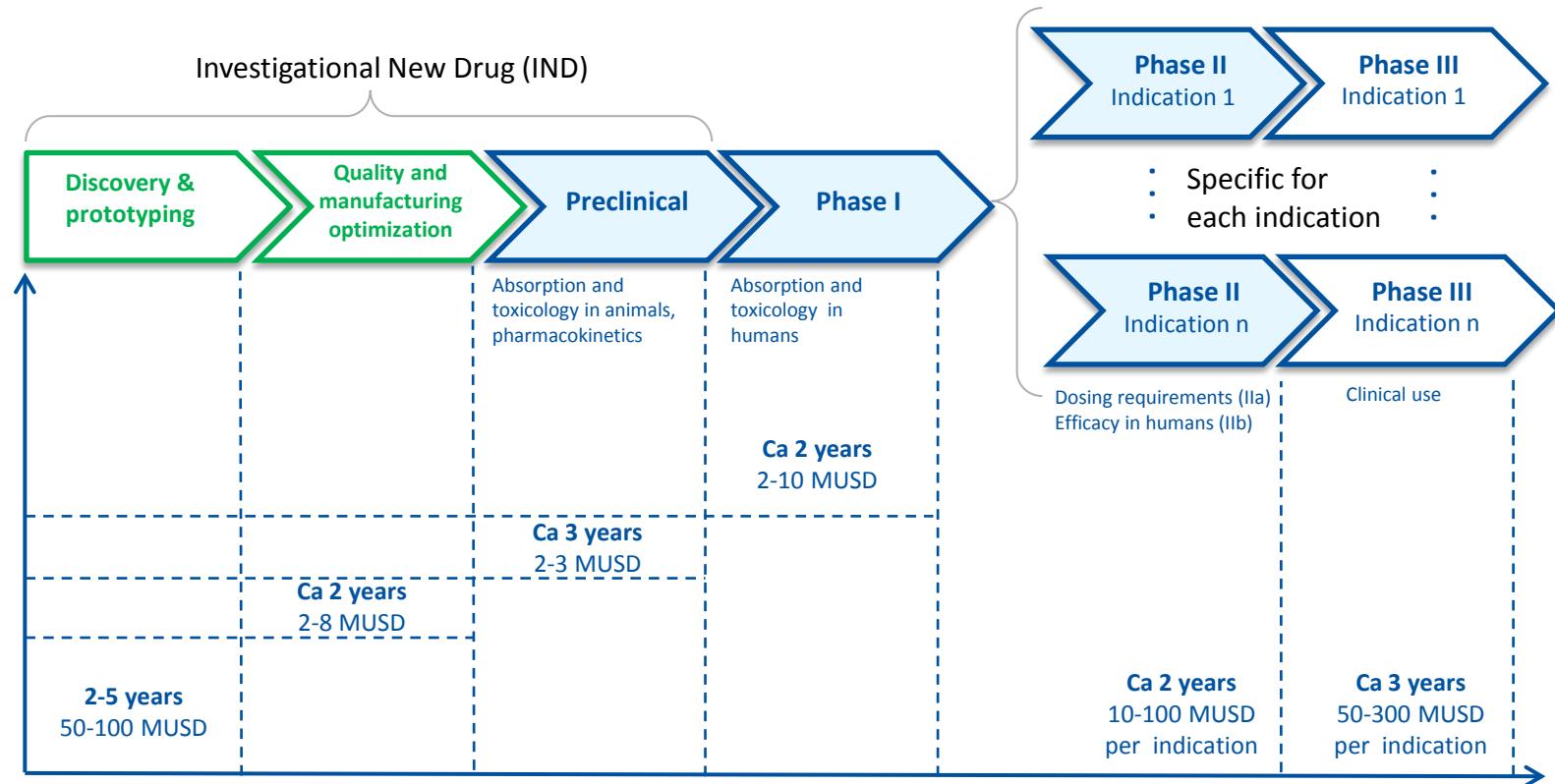
Typical pharma development costs

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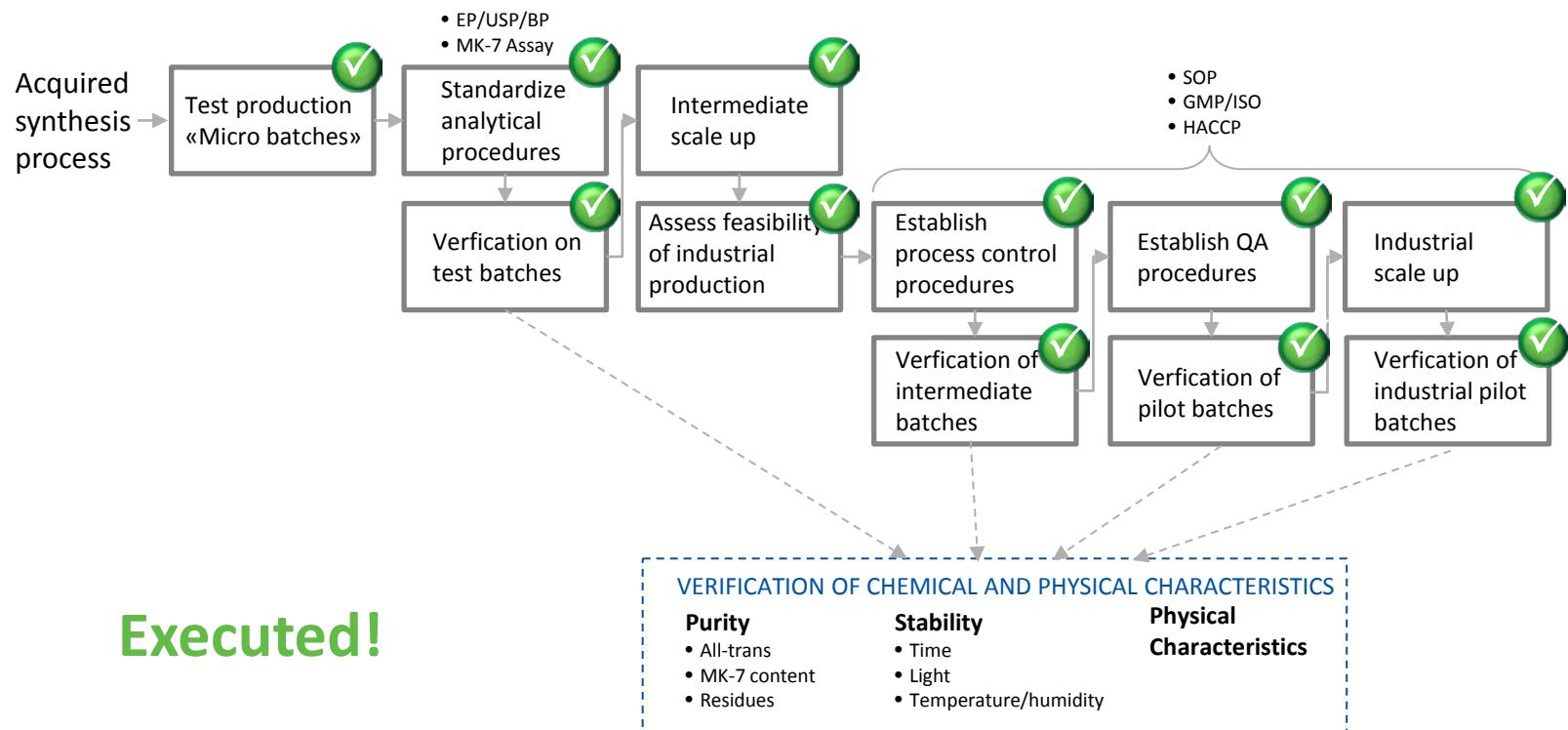


Typical pharma development costs

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Documenting production and quality



Possibilities for success if successful in the previous stage

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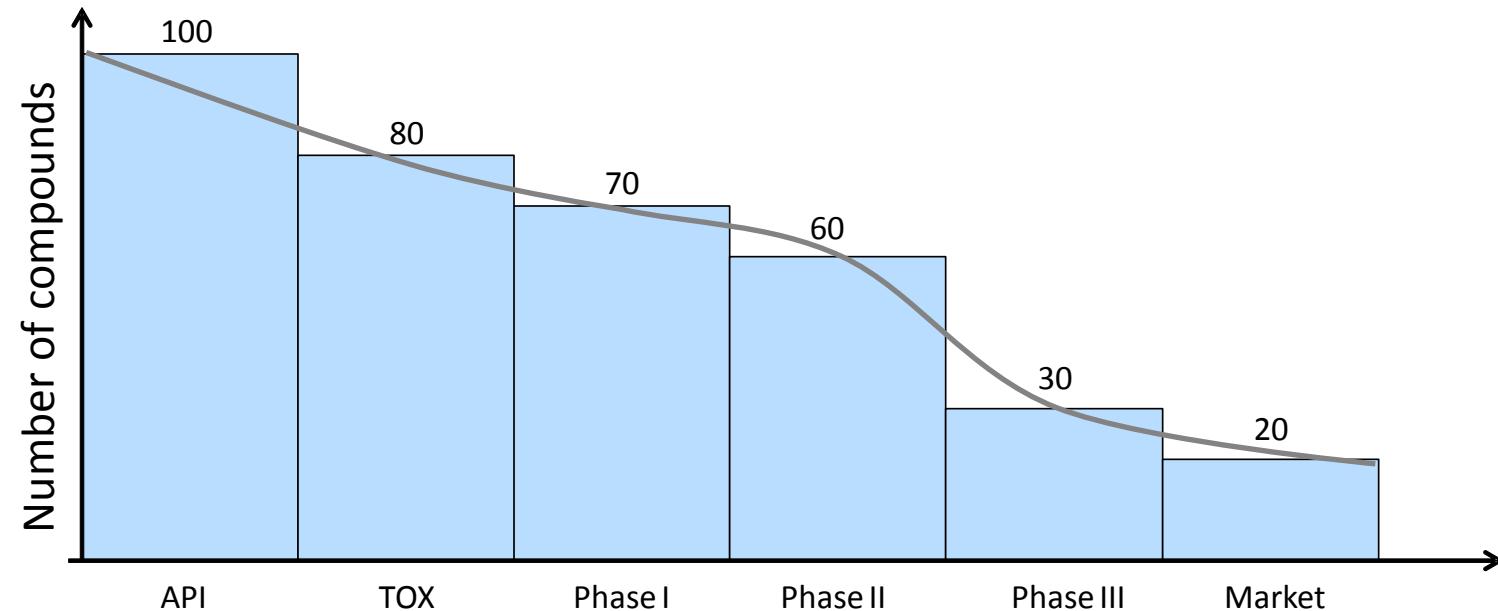
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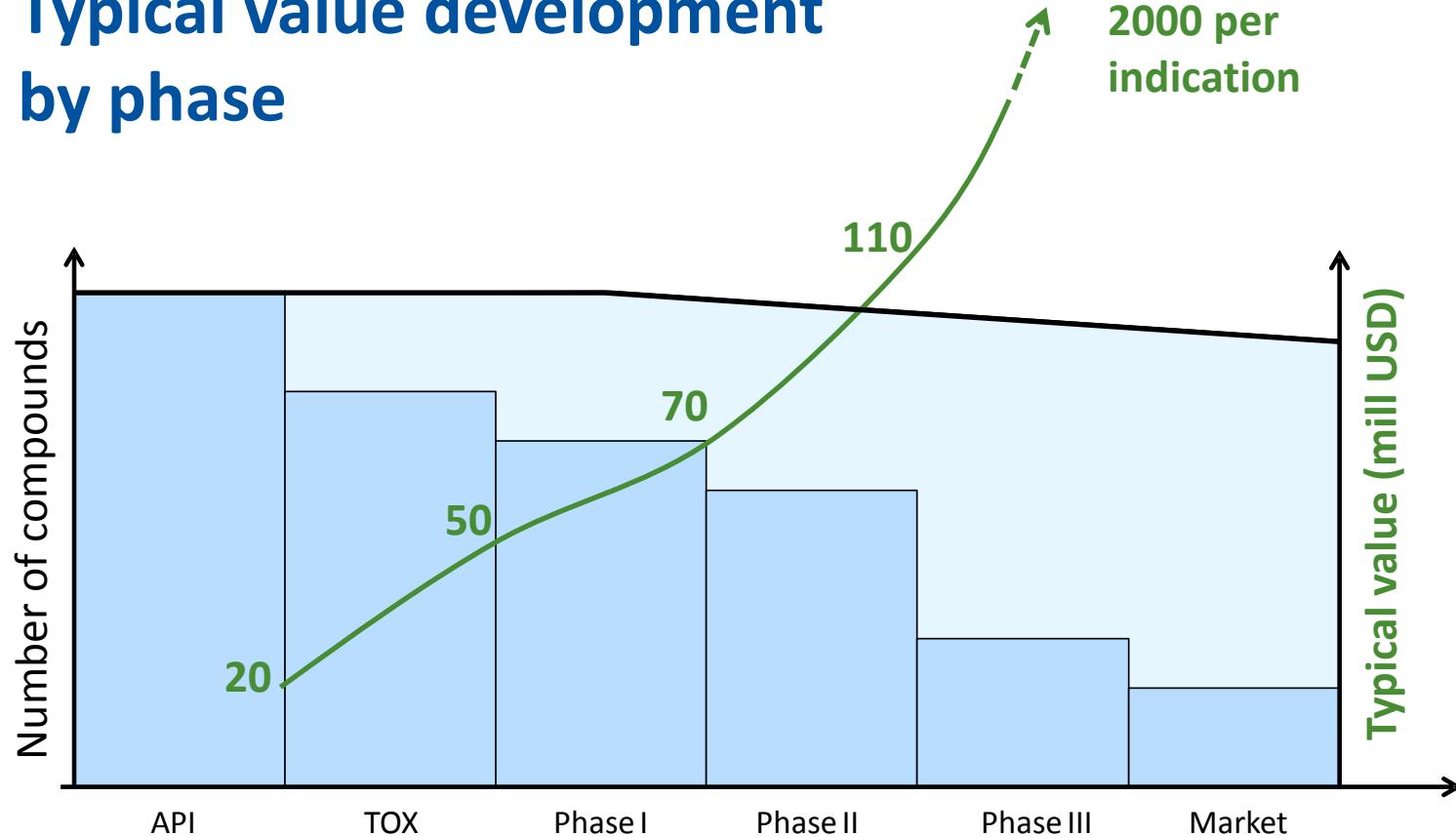
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Typical value development by phase



Previous studies eliminates risk

NP funded studies on natural MK-7 (200 mill NOK investment) has taken away «95%» of the risks associated with drug development.

- Demonstrated safe in animals in supplement doses.
- Demonstrated absorption in humans and animals.
- Demonstrated to have physiological effects on functional human proteins (MGP and osteocalcin).
- Demonstrated to have clinical effects on bone, cardiovascular and metabolism in healthy humans.
- Demonstrated safe in humans

The CTD (Common Technical Document) triangle

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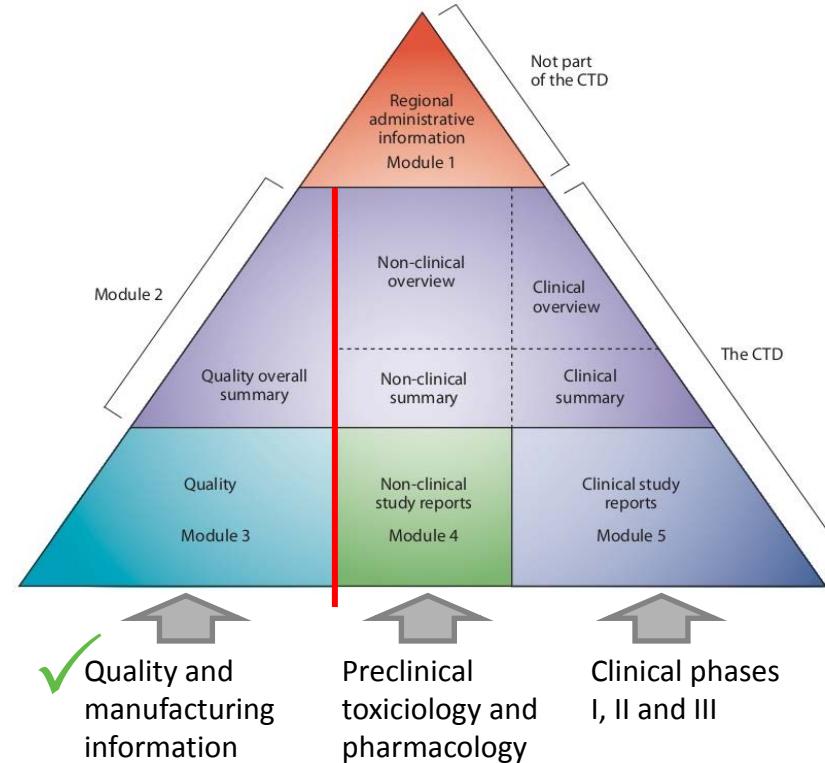
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The elements
required for a drug
approval application

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