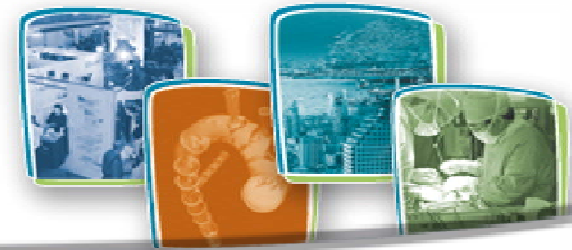


ICI Meeting
2008

**Innovations
in Cardiovascular
Interventions**



December 7-9, 2008 | Tel-Aviv, Israel



***CO-OPERATION BETWEEN THE
INDUSTRY AND THE MEDICAL COMMUNITY***

***Dr. CARMEN WALBERT MD
DIRECTOR SCIENTIFIC PROGRAMMES AND COMMUNICATION
CARDIOVASCULAR MEDTRONIC EUROPE***

CO-OPERATION BETWEEN THE INDUSTRY AND THE MEDICAL COMMUNITY



*Dr. R. Elmqvist (left)
Dr. Å. Senning (center)
and the first pacemaker patient,
Arne Larsson (right)*

Co-operative process

Development of
cutting edge
medical technology

Improvement of
existing products

Medical Device
Companies

+

Physicians

+

Patients



CO-OPERATION BETWEEN THE INDUSTRY AND THE MEDICAL COMMUNITY

- Principles of co-operation
- Areas of co-operation
- Types of co-operation
- Results of co-operation
- Importance of co-operation
- Thoughts on co-operation
- Thoughts on medicine



PRINCIPLES OF CO-OPERATION

- Highest ethical standards
- Trust
- Integrity
- Honesty
- Compliance with law
- Responsibility
- Dedication



AREAS OF CO-OPERATION*

**Cardiac
Arrhythmias**

**Heart
Failure**

**Sudden Cardiac
Death**

**Coronary Artery
Disease**

G/I Reflux

Incontinence

**Peripheral Vascular
Disease**



**Neurological
Conditions**

**Ear, Nose + Throat
Disorders**

**Heart Valve
Disease**

**Spinal
Disorders**

Spasticity

Chronic Pain

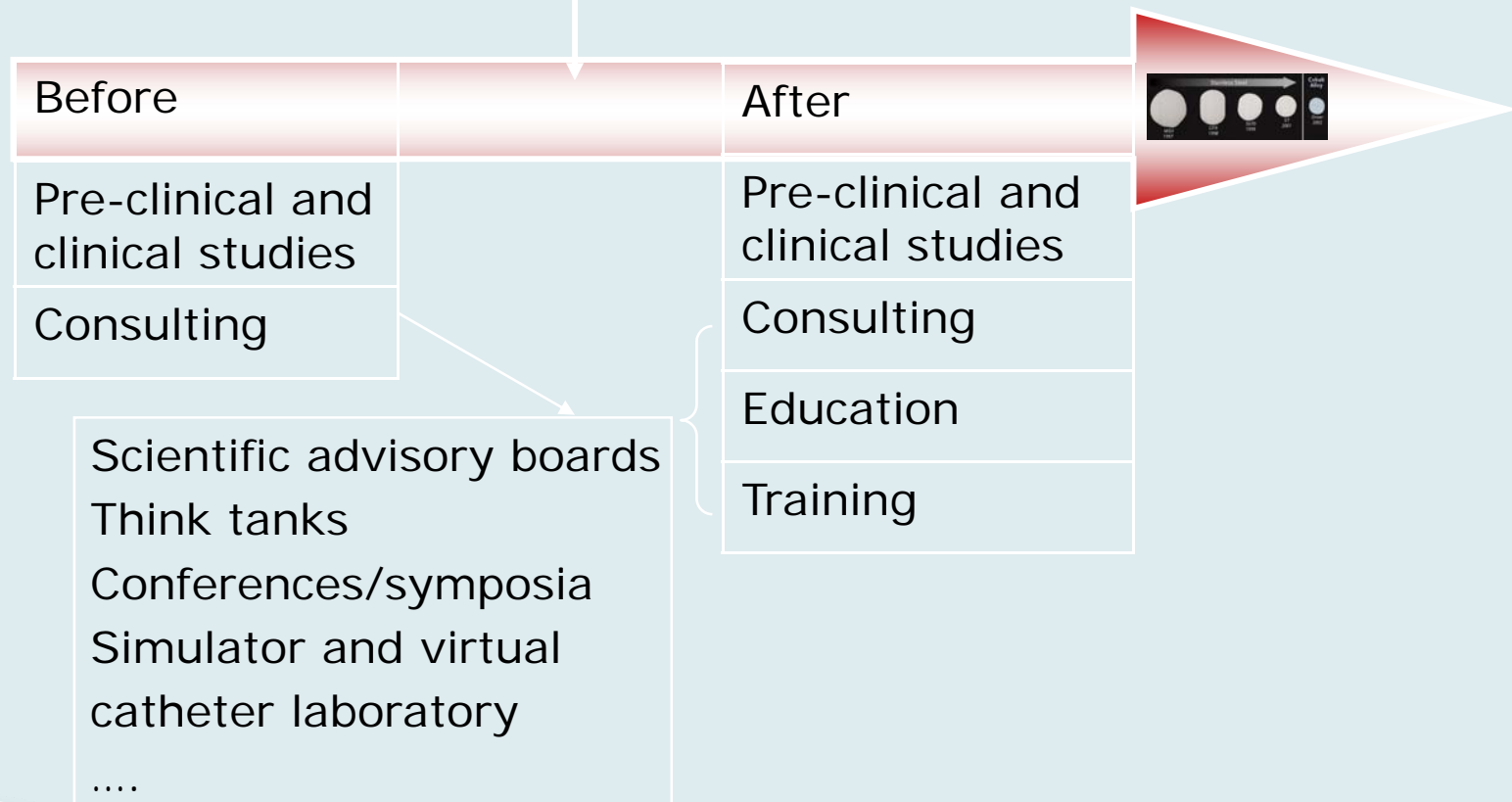
**Diabetes
Management**



* Medtronic

TYPES OF CO-OPERATION

Device approval and reimbursement



RESULTS OF CO-OPERATION (I)



Dr. C. Walton Lillehei with a child who received one of the early Medtronic external pacemakers



MID-1950s

Bulky external pacemakers

Dr. Lillehei
+
Colleagues
+
Medtronic
engineers

OBJECTIVE

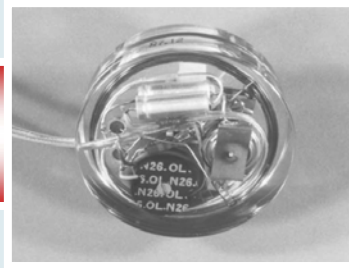
Develop a better
new kind of
pacemaker
*'not much
larger than a
paperback book'*

PACEMAKER

- Powered by mercury batteries
- Provided 9-volt DC pulse
- Could easily and comfortably be worn by young patients



RESULTS OF CO-OPERATION (II)



1960s

- After more than two years of experimental work first successful attempts at designing a totally implantable pacemaker reported by:
 - Dr. William Chardack
 - Dr. Andrew Gage
 - Wilson Greatbatch - electrical engineerAt the Veterans Administration Hospital in Buffalo/New York
- Medtronic exclusive rights to produce and market the Chardack-Greatbatch implantable pulse generator



RESULTS OF CO-OPERATION (III)



2000s

*Medtronic
Melody™ Transcatheter
Pulmonary Valve*

100th patient celebration



- Development of the Medtronic Melody Valve and Ensemble System - Medtronic partnered with:
 - Professor Philipp Bonhoeffer
(Great Ormond Street Hospital for Children London/UK)
 - NuMed Canada - pediatric catheter company
- Professor Bonhoeffer implanted the world's first transcatheter valve in September 2000.
- ~ **700 patients** treated with the Melody valve to date



IMPORTANCE OF CO-OPERATION (I)

- 'While risk is an inevitable part of developing a medical device, **collaboration is essential**.
....**Physicians conceived most of our products**.
- At Medtronic, we do not view **product development** as a two-step process — bench to bedside. Rather we see it as **bedside to bench to bedside**.'

- *(William A. Hawkins, Medical Innovation Summit, Cleveland Clinic Cleveland, Ohio - October 19, 2004)*



IMPORTANCE OF CO-OPERATION (II)

'Collaboration is not unique to Medtronic.'

'Today, throughout the device industry, this is more rule than exception.'

'In fact, every medical device on the market today is the result of appropriate collaboration with practicing clinicians.'

(William A. Hawkins, Medical Innovation Summit, Cleveland Clinic Cleveland, Ohio - October 19, 2004)



THOUGHTS ON CO-OPERATION

'We are what we repeatedly do, excellence than is not an act but a habit.'

(Aristotle)

'Not the hits of the hammer, but the slow flow of the water turns the stone into beauty.'

(R. Tagore)



THOUGHTS ON MEDICINE

‘Medicine is a
science of
uncertainty and an
art of probability.’

(Sir William Osler)

THANK YOU

