

# Life & Health Club

Highlights des ICLAM Kongresses in Mumbai

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**Life & Health Club, Zürich Partner Re**  
**2.März 2020**

# ICLAM & Genetik &

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Life & Health Club, Zürich Partner Re  
Bruno Soltermann

2.März 2020





International Committee  
for Insurance Medicine  
*founded in 1901*

PartnerRe



Seit 1935 regelmässige internationale Kongresse

1964 in Luzern

Ärzte, Underwriter, Schadenbearbeiter

Delegierte der einzelnen Länder

Board und Bureau











# Mumbai

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# Mumbai

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# Bahnhof von Mumbai

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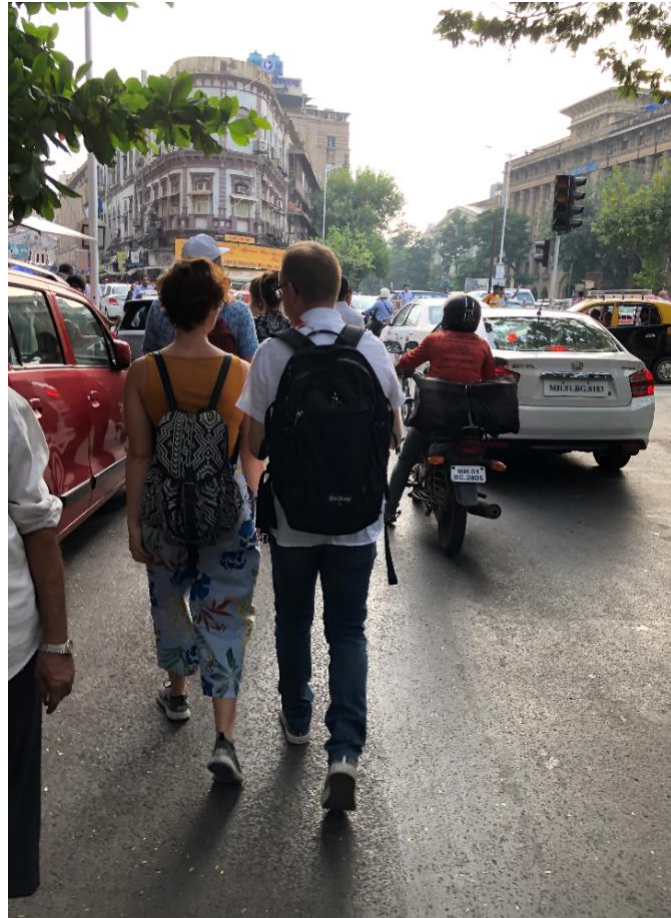
# Strassenverkehr in Mumbai

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# „Durchmischter Verkehr“ in Mumbai

PartnerRe





# Taxivarianten

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# Kongresshotel im Mumbai

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ICLAM is an Independent non-profit organization for Insurance medicine and has no commercial interests. ICLAM was founded in Amsterdam in 1901 at the second World conference of Insurance medicine, but its history started with the first World conference in Brussels in 1899. Since its foundation, ICLAM has organized conferences on all continents.

From November 10 to 13, 2019 ICLAM will organize the next **ICLAM Conference**, 120 years after the first world conference.

#### ICLAM's goals

ICLAM's aims are to provide an international forum for the latest insights and statistics on prognosis of medical and surgical treatment in the field of life, disability and health insurance. ICLAM arranges World conferences of insurance medicine every three years and gives support to new organizations of insurance medicine on all continents.

#### » Membership of ICLAM is free

#### Want to learn more about ICLAM?

Visit the ICLAM websites listed in the red bar above to learn more about the next **ICLAM world conference**, ICLAM's **Association**, **Foundation**, and **Award**, and about **Research & Education**. Please visit our comprehensible **News overview** with news from all ICLAM websites.

*Click the orange syndicate button to subscribe to a selection of the most important ICLAM feeds.*



10<sup>th</sup> - 13<sup>th</sup> November 2019

400+

REGISTRATIONS  
(LOCAL & INTERNATIONAL)

25+

INTERNATIONAL  
SPEAKERS

25+

PARTICIPATING  
COUNTRIES

25+

KEY TRENDING  
TOPICS

*धन्यवाद (Hindi: Thank you) very much for a fabulous response.  
We look forward to welcoming you!*



Watch the space @ [www.iclammumbai2019.org](http://www.iclammumbai2019.org) for more updates

- Team ICLAM Mumbai 2019



ICLAM Mumbai 2019, November 10-13

ICLAM's World conference will start in : DAYS -90 HRS 21 MINS 11 SECS 48

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## INTERNATIONAL COMMITTEE FOR INSURANCE MEDICINE



## INTERNATIONAL COMMITTEE FOR INSURANCE MEDICINE

[illegible]

## Genetic Regulations vs Direct-to-Consumer Genetics Test

*What does the future hold?*

International Committee of Insurance Medicine 2019

Ronnie Klein, Executive Director BILTIR

11 November 2019, Mumbai (India)

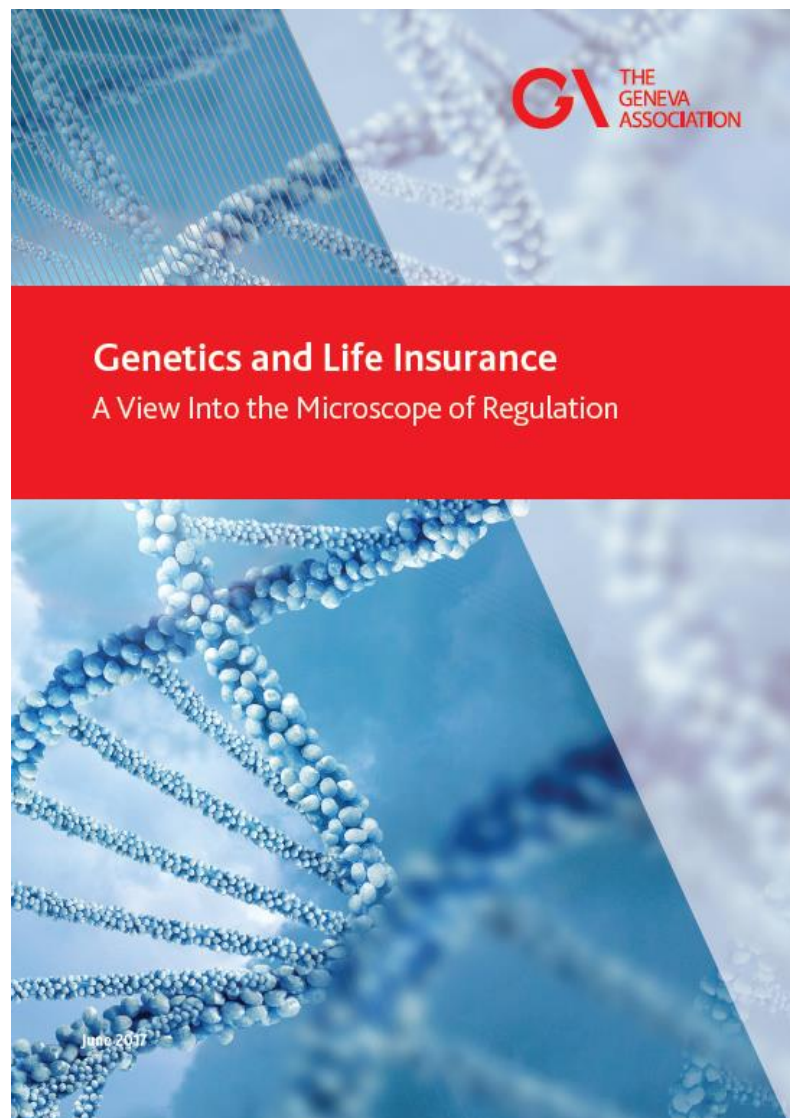
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## Basic Categories of Genetic Regulation with respect to Life Insurance



- \ 1. No regulation
- \ 2. No regulation with written or unwritten codes of conduct from insurance industry groups
- \ 3. Prohibitions on insurers requiring applicants to take a genetic test and prohibitions on discrimination if the applicant refuses to take a test
- \ 4. Prohibitions or moratoriums on using results from existing tests when policies are below certain limits
- \ 5. Prohibitions or moratoriums on using results from existing tests at all, sometimes including use of family history information

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# Country by Country Regulation

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| Country     | Regulation Category | Lates effective year |
|-------------|---------------------|----------------------|
| Australia   | 3                   | 2016                 |
| Austria     | 5                   | 2005                 |
| Belgium     | 5                   | 1992                 |
| Canada      | 5                   | 2017                 |
| China       | 1                   |                      |
| Denmark     | 5                   | 1997                 |
| Finland     | 1                   | 1999                 |
| France      | 5                   | 2011                 |
| Germany     | 4                   | 2010                 |
| Greece      | 2                   |                      |
| Japan       | 2                   |                      |
| India       | 1                   |                      |
| Ireland     | 5                   | 2005                 |
| Switzerland | 4                   | 2004                 |

Source : Geneva Association GENETICS AND LIFE INSURANCE—A VIEW INTO THE MICROSCOPE OF REGULATION



## Genetic Exceptionalism

\ **Genetic exceptionalism** is the belief that genetic information is special and so must be treated differently from other types of medical information.

\ Many academics and physicians do not believe in this principal

\ Most notably, Dr. Sonia Sutter, Professor of Law at GW Law School

\ Many governments are siding with popular belief that genetic testing **is** special and, therefore, deserves special regulation

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# Problem der Diskriminierung am Beispiel der Polyzystischen Nierenerkrankung

## Genotyp – Diagnose durch Gentest

Autosomal dominant

Monoculär Gen 16

Penetranz

- >70% im Alter 30
- >90% im Alter 50
- 99% im Alter 55

## Phänotyp – Diagnose durch konventionelle Methoden

Zysten im Ultraschall bereits in der Jugend sichtbar



<http://www.buergerhospital-ffm.de/news-veranstaltungen/gesundheits Themen/news/zystische-nierenerkrankungen-im-kindesalter-53/news-action/show/>

Diskriminierung liegt beim Phänotyp: Muss Diagnose bei Versicherungskauf offenlegen und höhere Prämie bezahlen

## What does this mean for the Life Insurance industry?

### Everybody's doing DNA tests

Total number of people tested by consumer genetics companies through January 2019, in millions

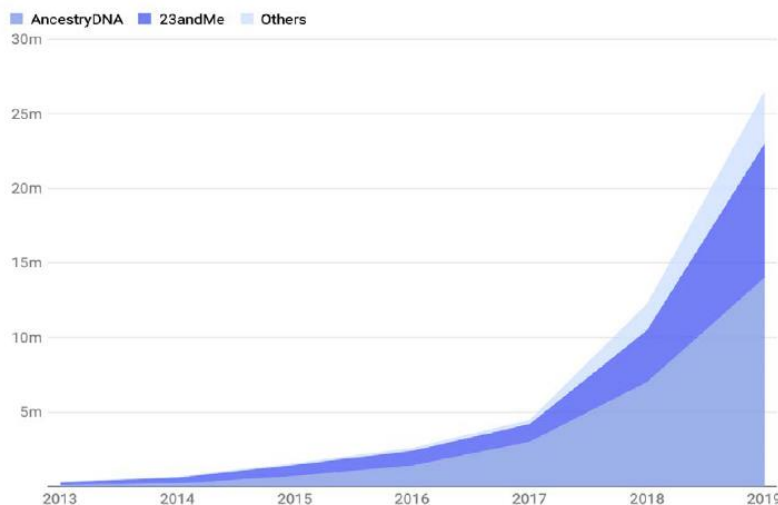


Chart: MIT Technology Review • Source: Company reports, Leah Larkin, ISOGG • Created with Datawrapper

- 25 million is still a relatively small percentage of world population
- However, an estimated 1-in-25 people in the US have taken a genetic test and the US is the largest life insurance market
- Testing in China has been increasing dramatically year on year
- As prices decline, demand will continue to grow
- **Is it an issue for life insurers?**

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## ADVANCES IN THE TREATMENT OF CORONARY ARTERY DISEASE – IMPACT ON LIFE INSURANCE



DR. KARSTEN FILZMAIER

CHIEF MEDICAL OFFICER & CO-FOUNDER WE4 IMPACT

ICLAM, MUMBAI, 11 NOVEMBER 2019





| Anwendung                                                                                                                                                | Vorteile                                                                                                      | Auswirkungen                                                                                                                                                                     |
|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Roboter assistierte koronare Bypass Chirurgie</b>                                                                                                     | Kleinere Inzisionen<br>Weniger Schmerzen<br>Kürzere Hospitalisation                                           | Keine verminderte Mortalität<br>Keine Kostenersparnis                                                                                                                            |
| <b>Medikamentenbeschichtete Stents (DES) vs. bioresorbierbare Scaffolds (BRS)</b><br>(Glucocorticoide, Zytostatika, Immunmodulatoren, Antiproliferativa) | Klare Vorteile gegenüber Ballon und Metallstents.<br><br>Theoretisch ebenfalls Vorteile der BRS gegenüber DES | Mortalität bei BRS und DES gleich<br><br>Kosten vergleichbar<br><br>3-Jahresergebnisse eher zuungunsten der BRS                                                                  |
| <b>Nanotechnologie</b><br><br><b>Monoklonale Antikörper</b><br><br><b>Mesenchymale Stammzellen</b><br><br><b>3D-Printing</b>                             | Zurzeit rein theoretisch                                                                                      | Es wird noch Jahre dauern, bis die Nanotechnologie in der Therapie der KHK Einzug hält.<br><br>Eine Verbesserung der Therapieresultate bei tieferen Kosten kann erwartet werden. |

# Krebs

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Achim Regenauer

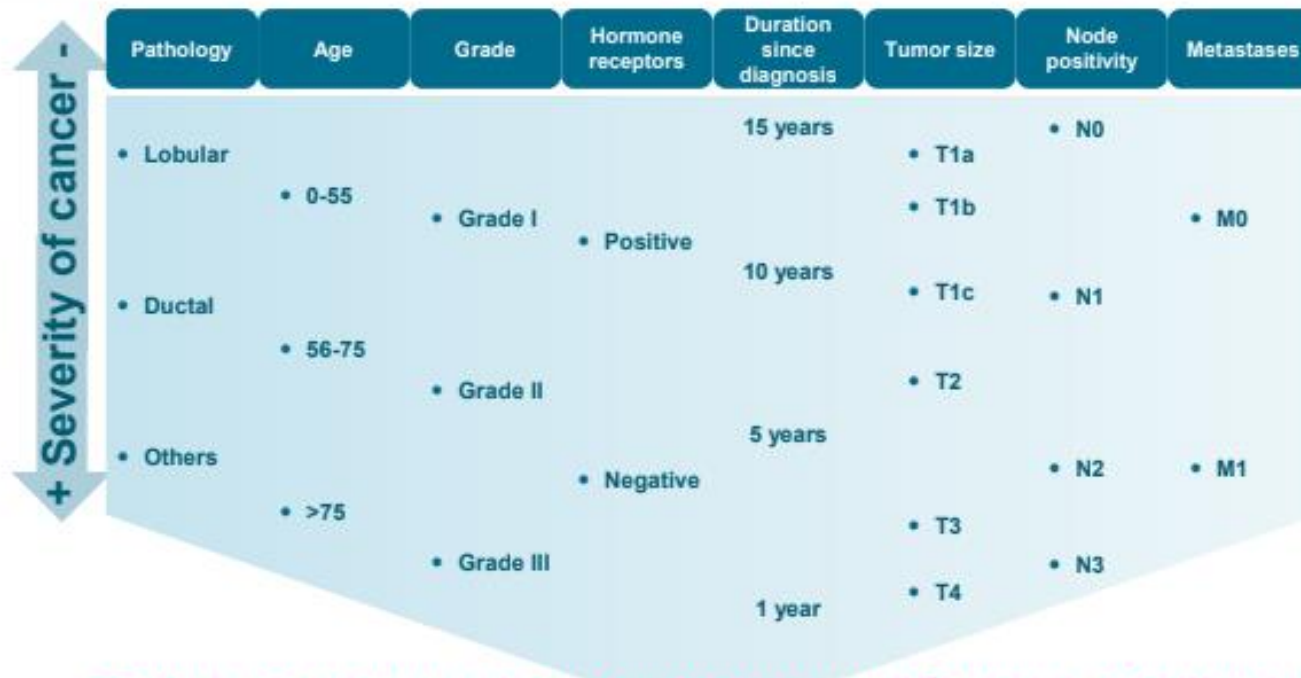
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# Rough Guidance of Breast Cancer Px



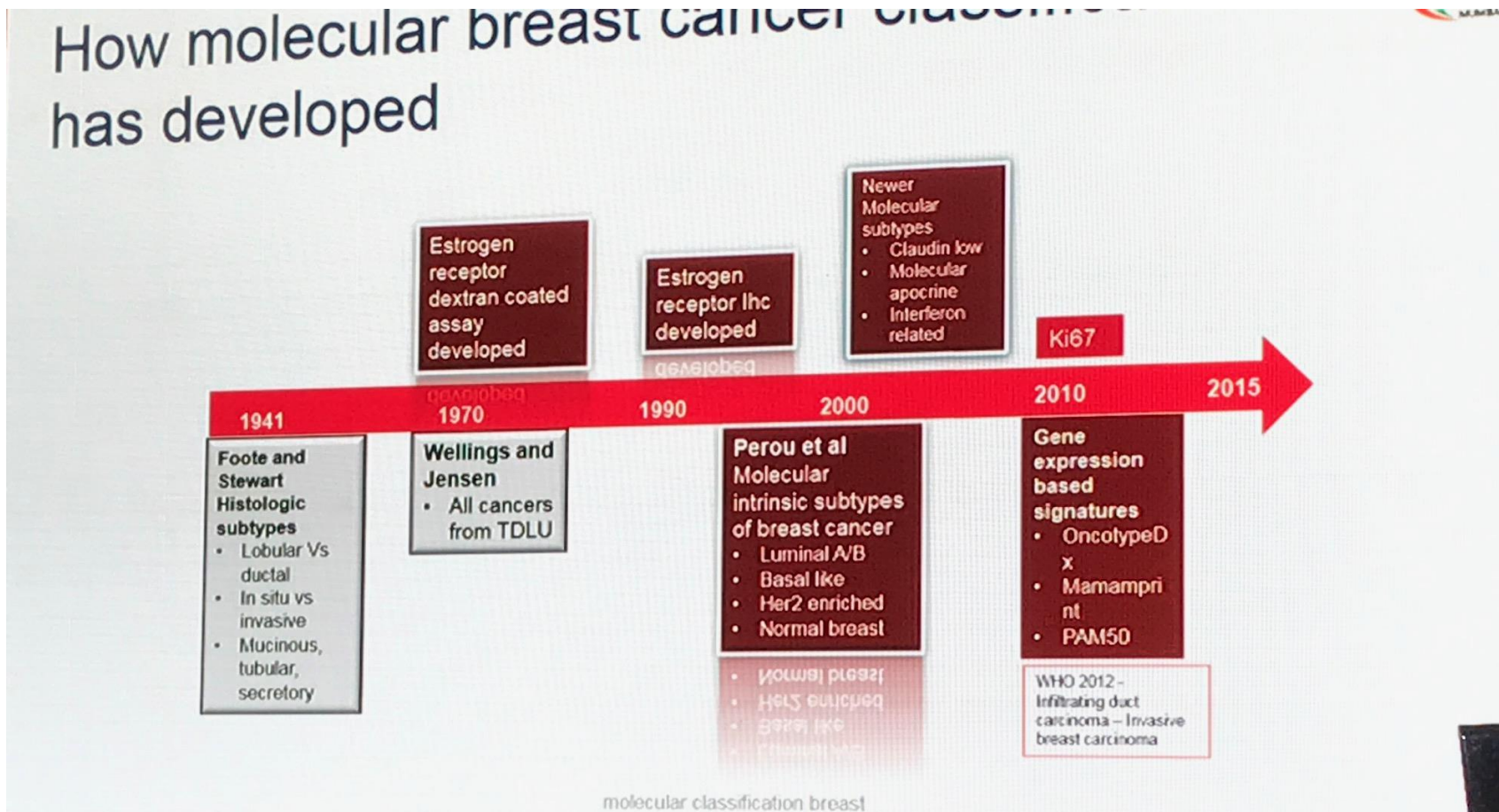
Breast cancer prognosis is based on multiple parameters



**There is no other way than developing a multifactorial algorithm to estimate the risk based on so many predictive factors**



# Breast Cancer



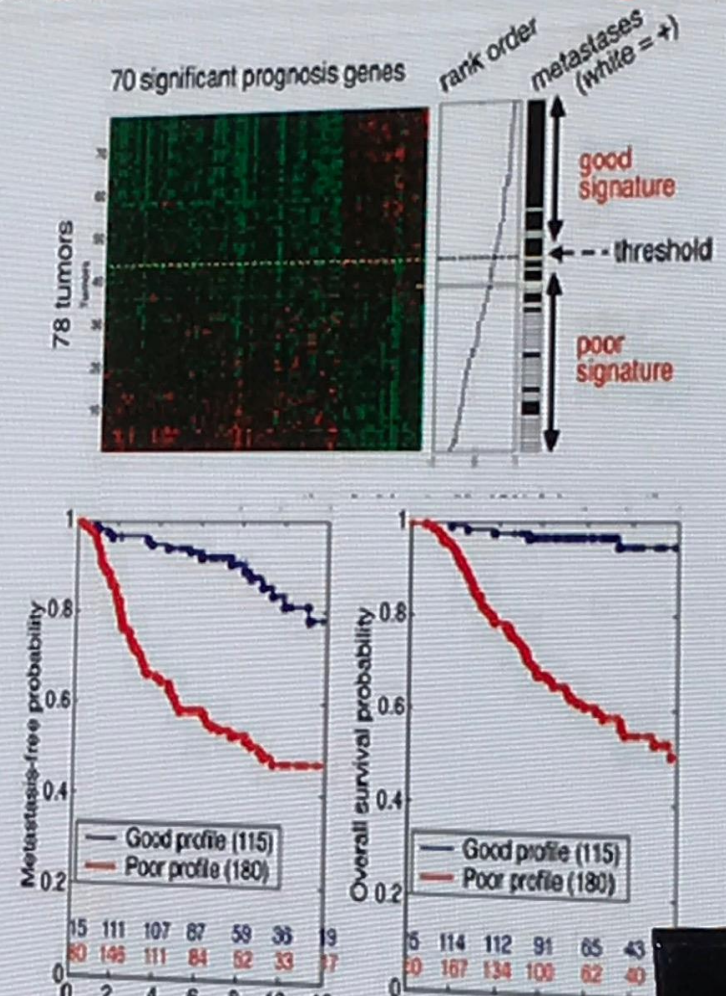
# Breast Cancer

Clinicopathologic features  $\Rightarrow$  Biomarkers & Genes

## Molecular classification of breast cancer

- Perou CM, *et al.* Molecular portraits of human breast tumors. 5 subtypes- Luminal A and B( ER+ +/- high proliferation), basal like, ERB2 like, normal breast like *Nature* 2000; 406: 747-752
- Sorlie et al- LABC- Luminal A longest survival while basal and HER2neu worst. *Proc Natl Acad Sci USA* 2001;98:10869
- 70 gene signature – good prognosis signature (GPS) & poor prognostic signature (PPS) that significantly predicted DFS. van't Veer *et al Nature* 2002;415:530.

Validated in 295 patients younger than 50 years- 94.5% 10 year survival in GPS & 54.6% in PPS. PPS was strongest predictor of likelihood of distant metastases *NEJM* 2002;19:1999-2009





Yersal O *et al.* Biological subtypes of breast cancer

**Table 2 First generation gene expression signatures**

| Gene signature               | MammaPrint                                          | OncotypeDX                                  | MapQuantDX                                      | Breast cancer index                             | PAM 50 assay                                      |
|------------------------------|-----------------------------------------------------|---------------------------------------------|-------------------------------------------------|-------------------------------------------------|---------------------------------------------------|
| Starting material            | FF or stabilized RNA, FFPE                          | FFPE                                        | FFPE, FF                                        | FFPE                                            | FFPE                                              |
| Analytical platform          | Microarray, RT-PCR                                  | qRT-PCR                                     | Microarray, qRT-PCR                             | qRT-PCR                                         | nCounter                                          |
| Number of genes              | 70                                                  | 21                                          | 97/9                                            | 7                                               | 50                                                |
| Indications                  | Stage I / II, 5 cm, ER (+), Node (-)/[1-3 Node (+)] | ER(+), Node (-)                             | ER (+), G2                                      | ER (+)                                          | All, Node (-) untreated                           |
| Application                  | Clinical outcome                                    | Clinical outcome, benefit from chemotherapy | Molecular grading prediction of response to TMX | Clinical outcome, prediction of response to TMX | Subtype definition risk of relapse with treatment |
| FDA approved                 | Yes                                                 | No                                          | No                                              | No                                              | No                                                |
| ASCO and NCCN recommendation | No                                                  | Yes                                         | No                                              | No                                              | No                                                |

FF: Fresh frozen; FFPE: Formalin fixed paraffin embedded; G: Grade; TMX: Tamoxifen.



## Oncotype DX® 21-Gene Recurrence Score (RS) Assay

16 Cancer and 5 Reference Genes From 3 Studies

### **PROLIFERATION**

KI-67  
STK15  
Survivin  
Cyclin B1  
MYBL2

### **ESTROGEN**

ER  
PR  
Bcl2  
SCUBE2

**GSTM1**

**BAG1**

### **INVASION**

Stromelysin 3  
Cathepsin L2

**CD68**

### **HER2**

GRB7  
HER2

### **REFERENCE**

Beta-actin  
GAPDH  
RPLPO  
GUS  
TFRC

$$\begin{aligned} \text{RS} = & + 0.47 \times \text{HER2 Group Score} \\ & - 0.34 \times \text{ER Group Score} \\ & + 1.04 \times \text{Proliferation Group Score} \\ & + 0.10 \times \text{Invasion Group Score} \\ & + 0.05 \times \text{CD68} \\ & - 0.08 \times \text{GSTM1} \\ & - 0.07 \times \text{BAG1} \end{aligned}$$

### **Category**

### **RS (0 -100)**

Low risk

RS <18

Int risk

RS 18 - 30

High risk

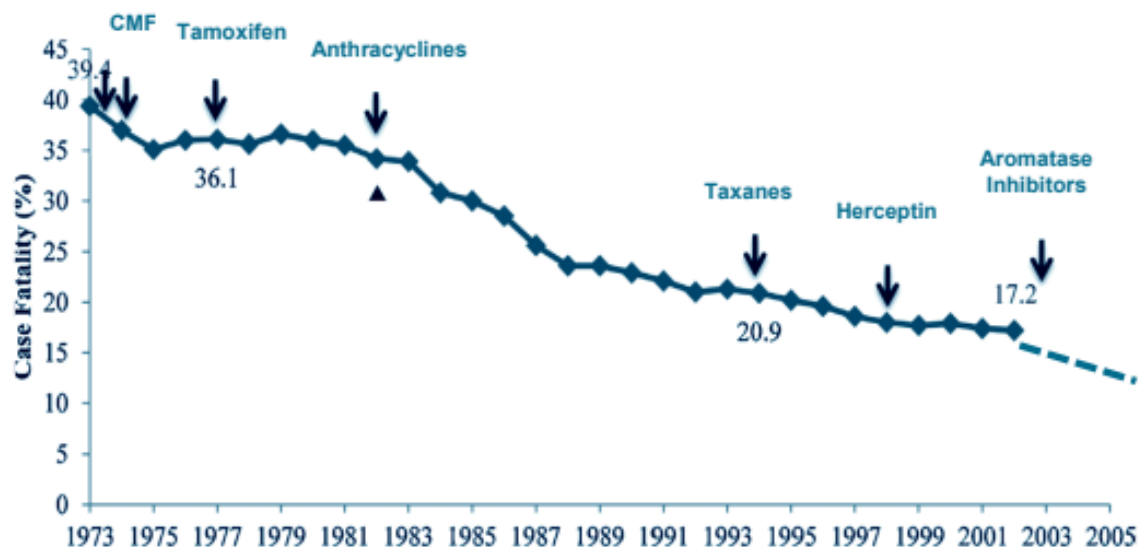
RS ≥ 31

Paik et al. *N Engl J Med.* 2004;351:2817

# Breast Cancer the Accelerator in Oncology

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Novel therapies have stepwise reduced the 15-year breast cancer mortality and are likely to continue due to **Innovation**



Impact on mortality under survey

- PARP inhibitors
- Cyclin dK4/6 inhibitors
- Immuno-drug conjugates
- Immunotherapy

Since 2004

Another example of adverse selection

## Issue of Thyroid Cancer in Insurance Population - claims study and market information



- In most market, The micro or T1N0M0 papillary cancer of thyroid is excluded from cancer cover by the definition. However it was not excluded in the standardized malignant tumor definition of China.
- In our recent claim studies, thyroid cancer claims made up nearly 20% of all cancer claim in China market.
  - Thyroid cancer claim increased significantly especially in female

| Female                       | 2004-2008 | 2008-2012 | 2012-2015 |
|------------------------------|-----------|-----------|-----------|
| Thyroid cancer in all cancer | 6.8%      | 11.3%     | 19.6%     |

- Among thyroid cancer claims, T1N0M0 was about 61% and stage I was about 91%
- Other market information showed that thyroid cancer claim were about 40%-60% at T1N0M0 and 90%-94% at Stage I.

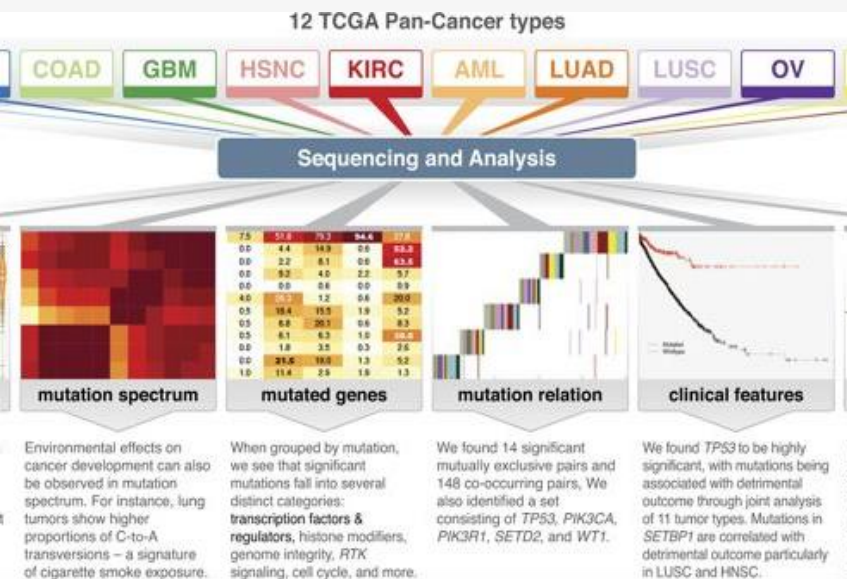
# Cancer Genomics - General

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Instead of Anatomical site & Histology  $\Rightarrow$  Molecular subclassification

## The Pan-Cancer Atlas

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“The Pan-Cancer Atlas reclassifies human tumour types based on molecular similarity, indicating that the cell of origin influences but does not fully determine tumour classification, which informs future clinical trial design and interpretation...”

- Cancer staging of the future will likely be (at least partly) on genomic alterations or features
- Even diagnosis of cancer could be based on genomic features



# Cancer Wearables – Breast Cancer

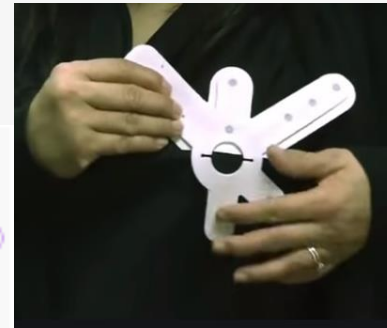
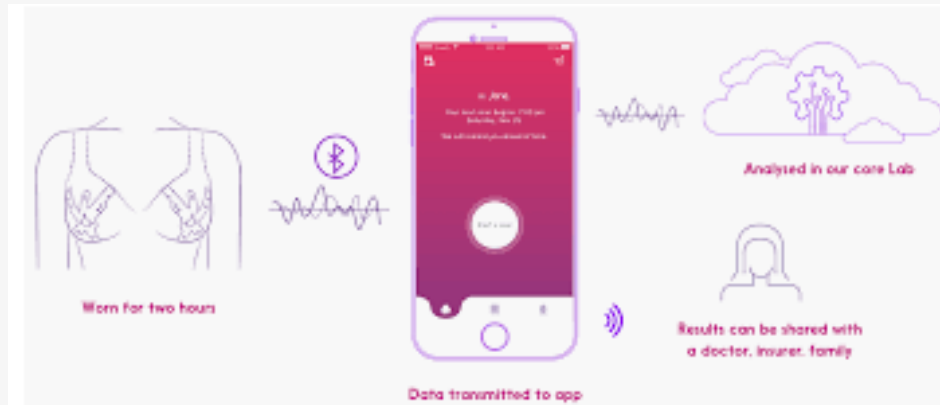
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## Innovative approaches

Cyrcadidas® IT Bra

Munich RE



Cyrcadidas® breast monitor uses a pair of wearable conformable patches, one for each breast

Each patch has eight embedded digital temperature sensors that transmit temperature data to a Bluetooth enabled Data Recording Device (DRD)

Targeted-/Immunotherapies are added to chemo- and/or radiotherapy in most of the cases (today)

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Targeted-/Immunotherapies are applied in most cases in advanced/ metastasized cancer stages (today)

---

The improvement in survival is nowadays limited to weeks/months in advanced tumour stages for most cancers. In some cases survival can be extended to a few years

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Targeted as well as immunotherapies exhibit significant side effects, which have an impact on physical capacity. Sometimes the development of other significant conditions is triggered

# Cancer Treatment Trends

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Many special features – significant potential for business

## What does the future hold for cancer treatment?

- New & Expensive Treatments
  - More and more expensive cancer treatments being developed (mainly drugs)
  - More treatments excluded from National / Social Health Insurance systems
  - More use of drugs for off-label and experimental purposes
  - More difficult claims adjudication / management for cancer drug reimbursement
  - More challenges to cost vs benefit (survival and Quality of Life) of new cancer treatments
  - Reimbursement with high benefit limits and without insurer control becomes more risky
- Patient Viewpoint
  - More treatment options with large variations in cost
  - More confusion about treatment options
  - More variation in recommendations from treating doctors

- 1 At the moment the advancements in cancer treatment are not increasing the insurability for CI and DI of applicants with a history of cancer and it remains unclear, if this will happen in the future
- 2 New screening applications and devices need to be monitored closely, as they carry a significant risk of unexpected incidence increase and antiselection
- 3 Cancer genomics will change the UW and claims practice in particular for CI in the future, for DI the impact is less significant



# Cancer Product Target Groups

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Cancer patients are special

## What do cancer patients care about?

- US CancerCare Patient Access & Engagement Report
  - Identifies barriers to cancer patient engagement with care providers
  - Characterises financial, emotional, social and QoL costs of cancer to patients and families
  - Recommends strategies and programs to promote cancer patient access and engagement
- Selected insights
  - More than 20% of the 25- to 54-year-old respondents did not follow some of their doctors' recommendations because of cost
  - Just over 50% had all of the information they needed about their cancer when diagnosed; fewer had sufficient information on insurance, emotional and practical support
  - 67% said they had enough information on the "benefits of the treatment plan"
  - 25% had access to a Patient or Nurse Navigator (the vast majority with one found it helpful)
  - 25% reported they had used cancer-specific counseling/support services

# Cancer Product Features

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Medical expertise is key

## Reimbursement or Lump Sum

- Reimbursement Product

- Covers actual treatment costs incurred (limits windfall / shortfall for the patient)

BUT

- Vulnerable to medical cost inflation and changes in medical practice
- Requires more intensive management of claims, especially high-cost treatments with questionable benefits

- Lump Sum Product

- Maximises financial flexibility and patient choice via payment of a lump sum

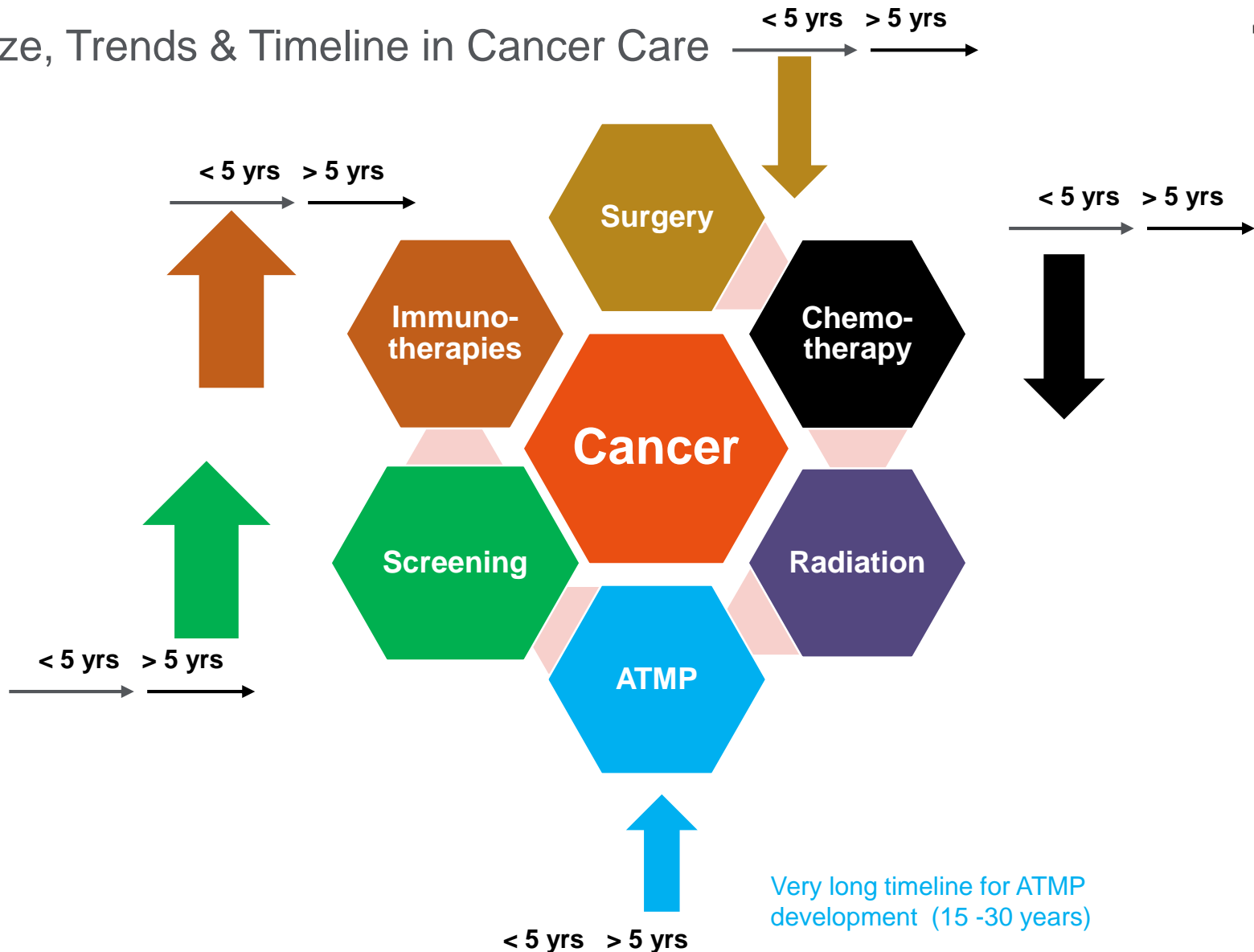
BUT

- Possibility of windfall gains for minor illness and shortfalls for severe illness
- Still vulnerable to changes in medical technology and diagnostic tools

# Innovative Cancer Preposition

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Size, Trends & Timeline in Cancer Care



# Digitale Versicherungsmedizin

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Achim Regenauer

2. März 2020

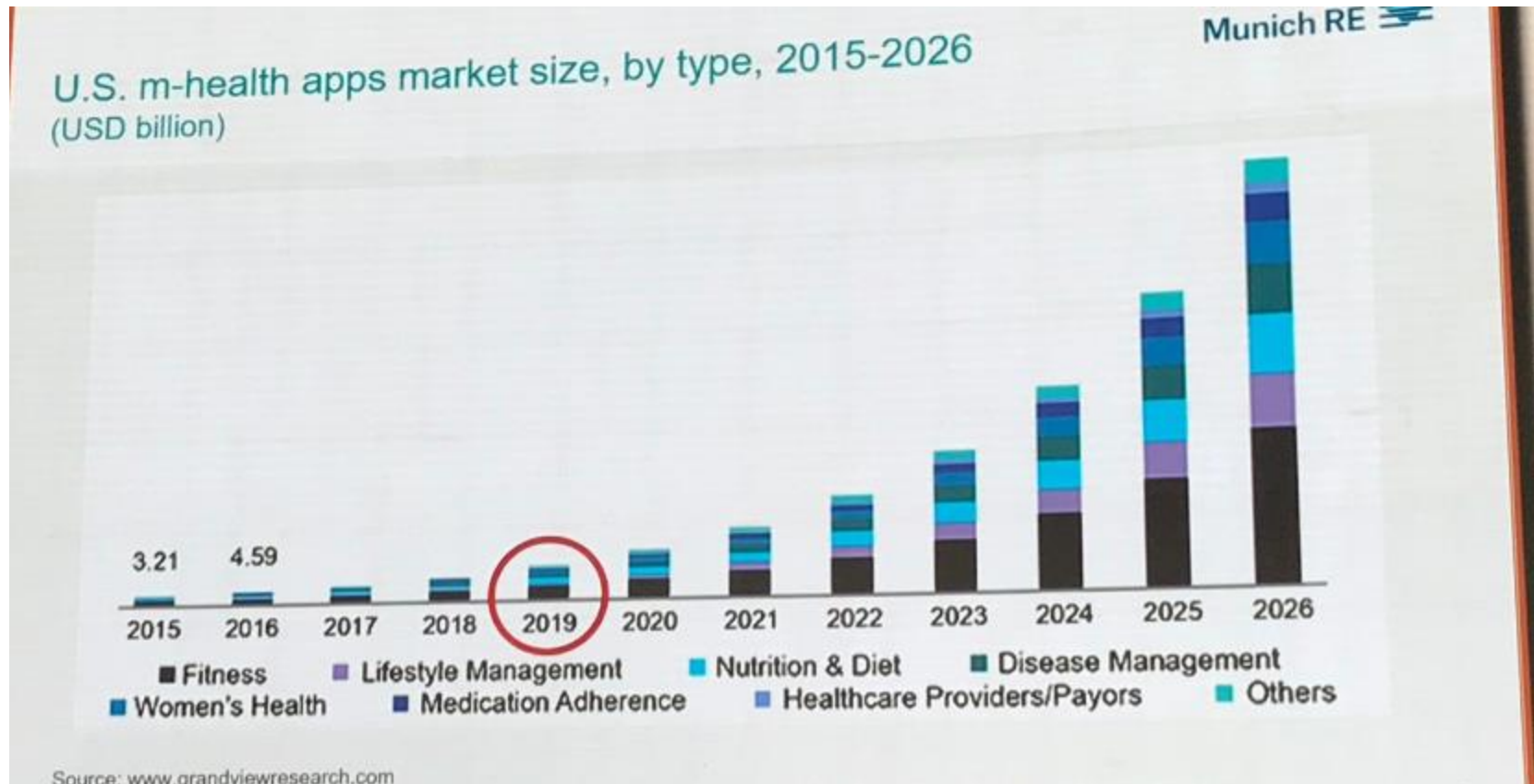




# Health Apps – Boomender Markt

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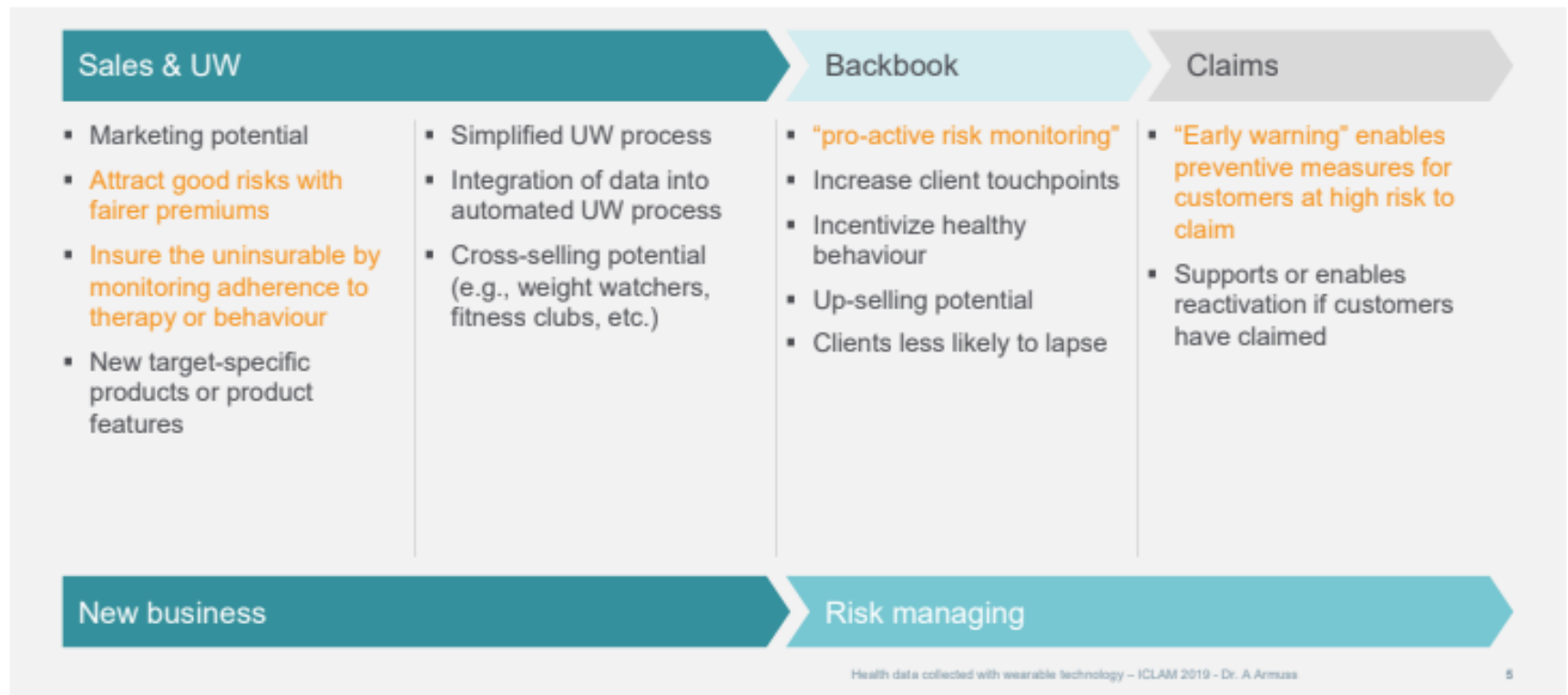
Was bedeutet das für Lebens- und Krankenversicherungen?



Fokussierung hier auf markierte Anwendungen durch 4 Parameter

## Connected Sensors and Devices

Impact on value chain in Life insurance

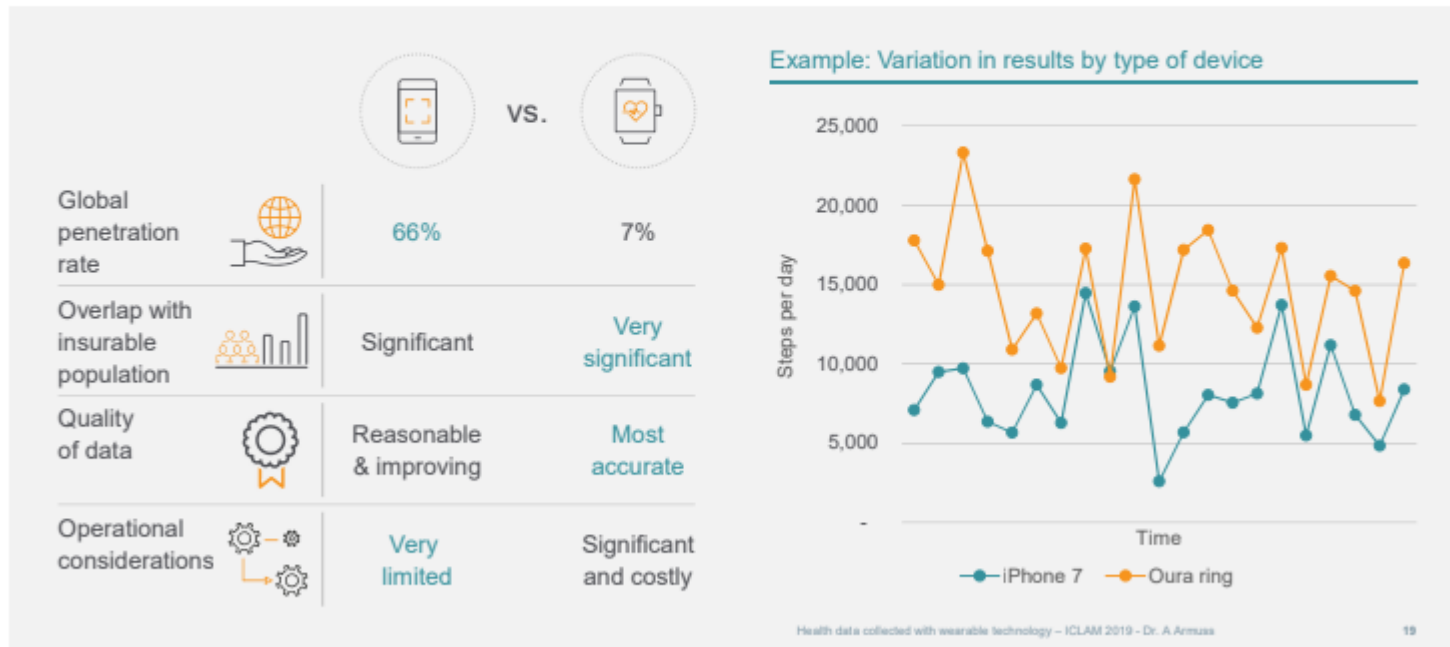


# #1: Monitoring körperlicher Aktivitäten



## Data sources

Smartphones vs. Wearables

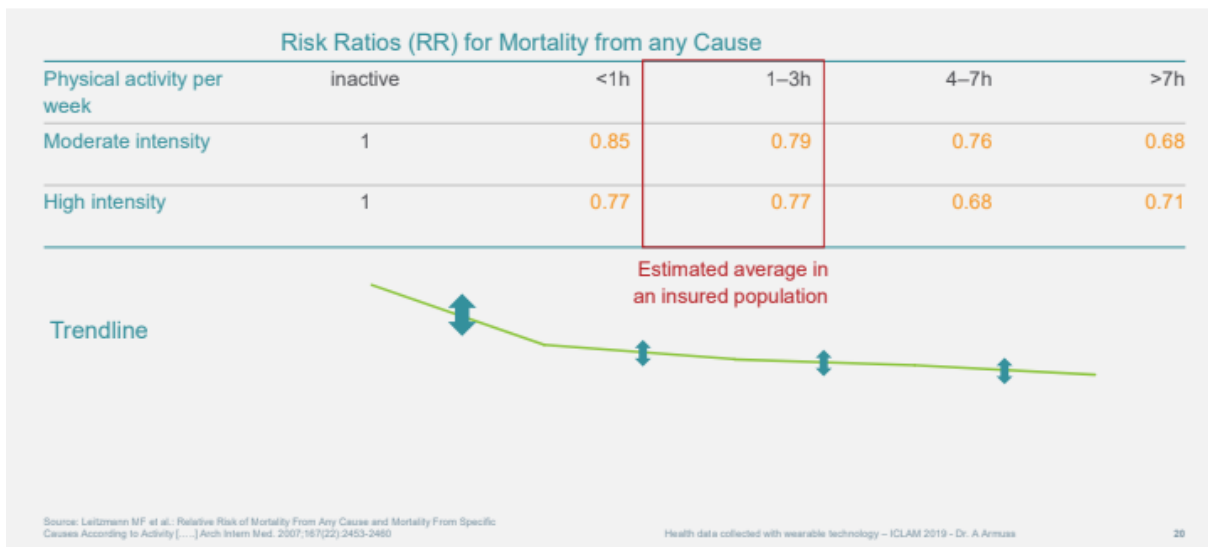


# Deutlicher Effekt, aber.....

## Was ist die Referenzpopulation?

### Interpreting medical study results Issues to consider

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N= 252 925 women and men  
50 to 71 years old  
1995-1996 bis 2001  
Erhebung durch Fragebögen



# Gar nicht so deutlicher Effekt.....

Selbst bei Morbidität

PartnerRe



## Medical literature review findings

### Critical Illness

Munich RE

#### Highlights and conclusions

- Overall the medical impact of increased physical activity on critical illness is limited (when compared to mortality)
- Medical evidence suggests that impacts exist in respect of
  - Cardiovascular conditions – Heart attack, CABG, Stroke
  - Certain cancers
    - Breast and colorectal cancer impacts confirmed
    - Endometrial and lung cancers have suggested impact only
- Largest impacts are in respect of moving from no activity to some activity, but relative impact decreases significantly with improved physical activity levels
- Due to claims composition by cause, medical impacts will be different by gender and country

#### Estimated impacts by claim cause

| Claim cause                   | Reduction per additional<br>1,000 MET minutes per week |
|-------------------------------|--------------------------------------------------------|
| Heart attack and CABG         | 3.0%                                                   |
| Stroke                        | 0.7%                                                   |
| Colorectal and lung cancer    | 5.0%                                                   |
| Breast and endometrial cancer | 1.0%                                                   |
| Other cancers                 | 0.0–2.0%                                               |

# Deutlicher Effekt, aber.....

Hintergrundrauschen unserer Versicherten

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## Summary

### Conclusion PA

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- Physical activity data is abundantly available through smartphones, wearables and the respective apps
- There are different ways of using the information available for our insurance purposes (steps, METs, etc.)
- The background activity of the population in question plays an important role when quantifying the impact of PA on mortality and morbidity
- PA increase above the averaged background activity has some impact on mortality, for CI the impact seems to be limited

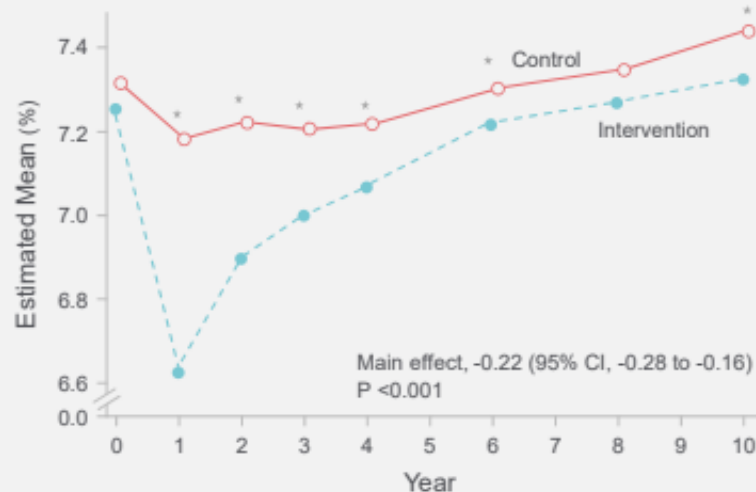
# #2: Monitoring Blutzucker

## Quality and Evidence

Lifestyle intervention and diabetes outcome

### Study from 2013: "Effects of Intensive Lifestyle Intervention in Type 2 Diabetes"

#### D Glycated Haemoglobin



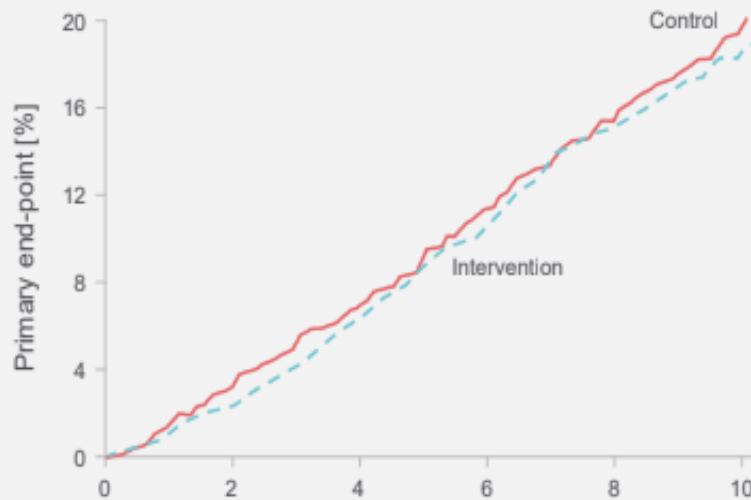
- 5145 overweight or obese patients with type 2 diabetes
- "Pre-Device" study
- **Control Group:** Diabetes support and education
- **Intervention Group:** + promoted weight loss through decreased caloric intake and increased physical activity

# #2: Monitoring Blutzucker

## Quality and Evidence

Lifestyle intervention and diabetes outcome

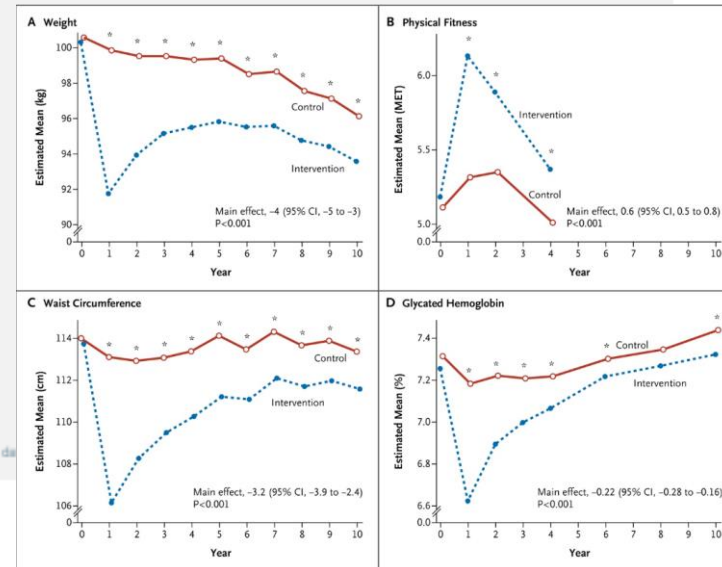
### Study from 2013: "Effects of Intensive Lifestyle Intervention in Type 2 Diabetes"



N Engl J Med 2013;369:145-54.

Health de

- Primary endpoint: cardiovascular death, heart attack, stroke
- No difference in mortality and morbidity between intervention and control group





# #3 : Screening Vorhofflimmern

## Atrial fibrillation detected with wearables

Cohort (n+100) included patients with hypertension (88%), Diabetes (36%), previous stroke (9%) and vascular disease (10%)

Overall (n = 100)

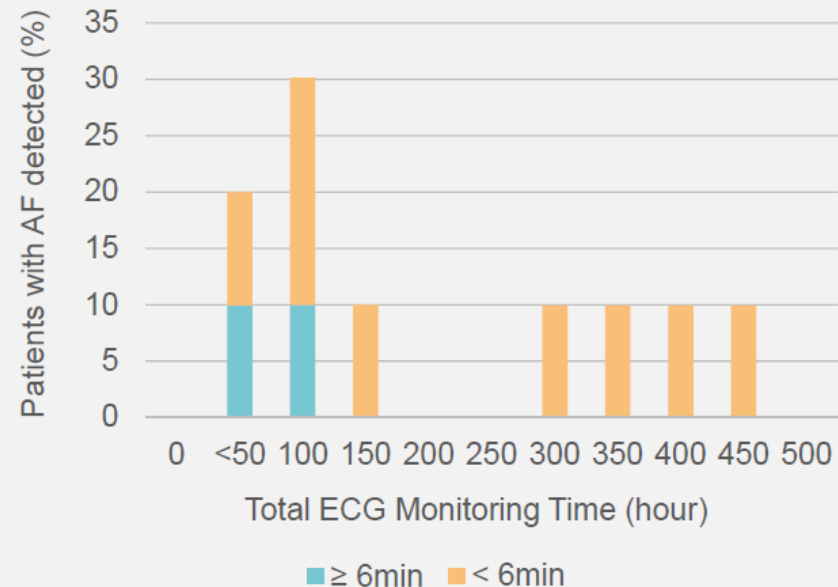
|                             |               |
|-----------------------------|---------------|
| Monitoring duration (hours) | 222.4 ± 199.3 |
|-----------------------------|---------------|

|            |          |
|------------|----------|
| Acceptance | 98 (98%) |
|------------|----------|

Overall (n = 98)

|                                |            |
|--------------------------------|------------|
| Newly detection of AF ≥ 30 sec | 10 (10.2%) |
|--------------------------------|------------|

|                            |          |
|----------------------------|----------|
| Newly detection AF ≥ 6 min | 2 (2.0%) |
|----------------------------|----------|



Source: Fukuma N. et al: "Feasibility of a T-Shirt-Type Wearable Electrocardiography Monitor for Detection of Covert Atrial Fibrillation in Young Healthy Adults", Nature research (2019) 9:11768

Health data collected with wearable technology – ICLAM 2019 - Dr. A Amuss

12

T-shirt with Hitoe material long-term monitoring:

- detected AF in 10% of young adult participants **without a history of AF**
- AF lasted for >6 minutes in 2% of the participants.

# #3 : Screening Vorhofflimmern



## Summary

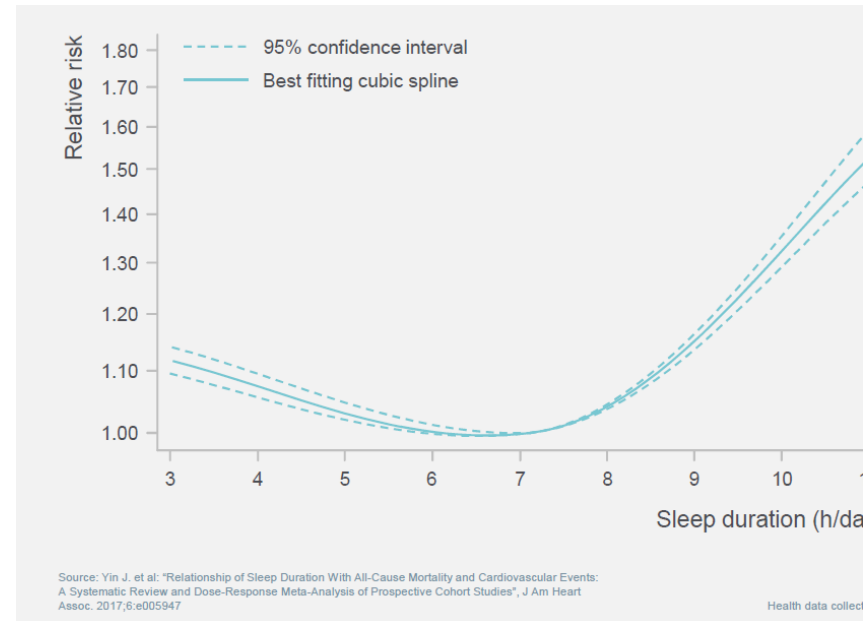
### Conclusion on AF screening



- AF screening is available through wearables and smart clothing (in development)
- Available literature suggests that atrial fibrillation can be detected with sufficient reliability by wearables
- If detection rate will further increase and applied even more to popular wearables, a reduction in preventable strokes can be expected
- The impact on mortality and morbidity is yet unclear, but theoretically not insignificant for Critical Illness

# # 4 : Schlaf Monitoring

## Sleep duration and risk of all-cause mortality



## Summary

### Conclusion sleep tracking

- Sleep tracking data is abundantly available through smartphones, wearables and the respective apps
- Available analysis suggests that there is a U-shaped relationship between sleep duration and some relevant endpoints (CV mortality and morbidity, all-cause mortality)
- Potential bias in the available literature needs to be considered and it is unclear if longer sleep duration is really increasing mortality and morbidity (e.g., does longer sleep reflect less physical activity or higher prevalence of other risk factors)

# Bewegung/Aktivitäten

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Philip Strasser

2.März 2020





# Economic cost of inactivity in EU-28

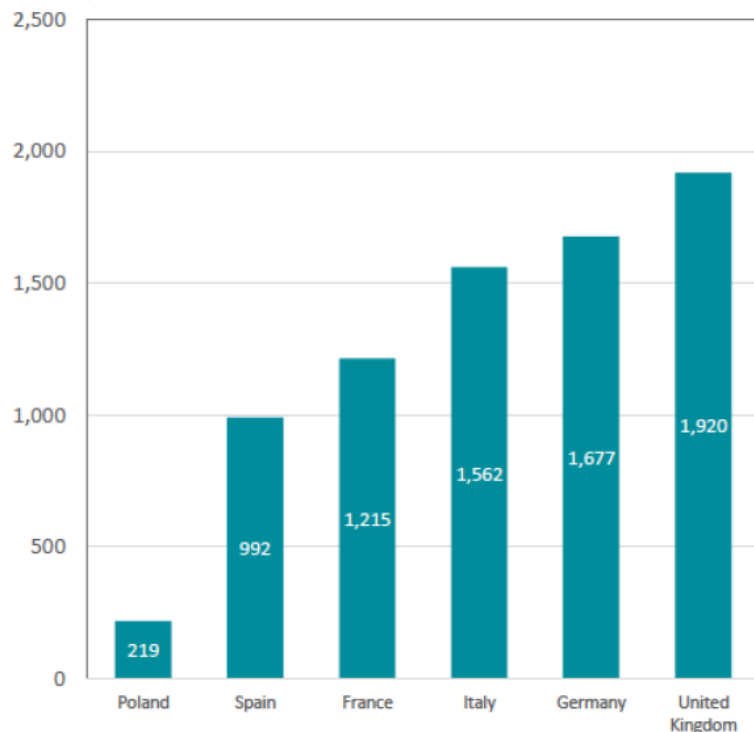
(Pr. Xavier Bigard, French Society of Exercise and Sports Medicine)

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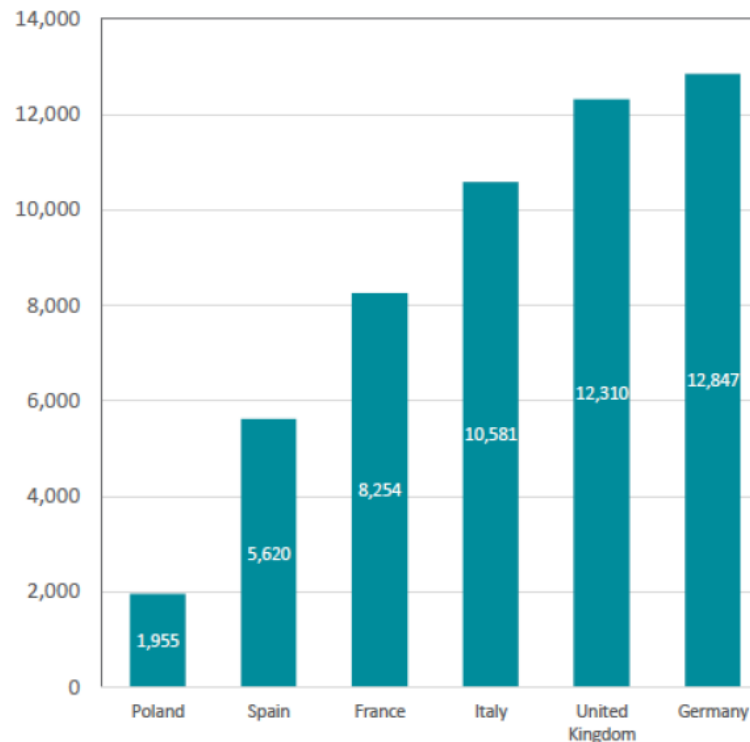
Direct cost in EU-28 = €9 billion / year

Direct costs of physical inactivity across six focus countries (millions of Euros), 2012



Indirect cost in EU-28 = €71 billion / year

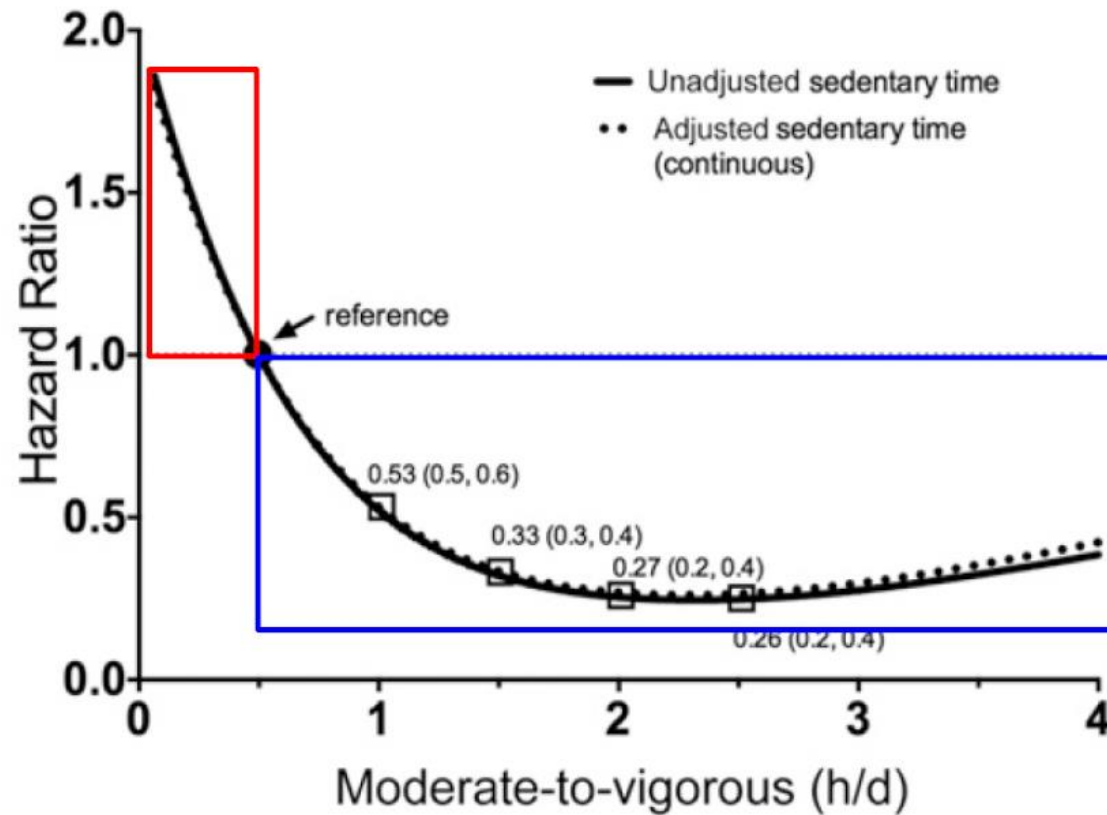
Indirect costs of physical inactivity across six focus countries (millions of Euros), 2012



Source: Lee et al., (2012), WHO, OECD, Eurostat, IDA, EUCAN, Cebr analysis

# Inactivity and mortality (Matthews et al., 2016)

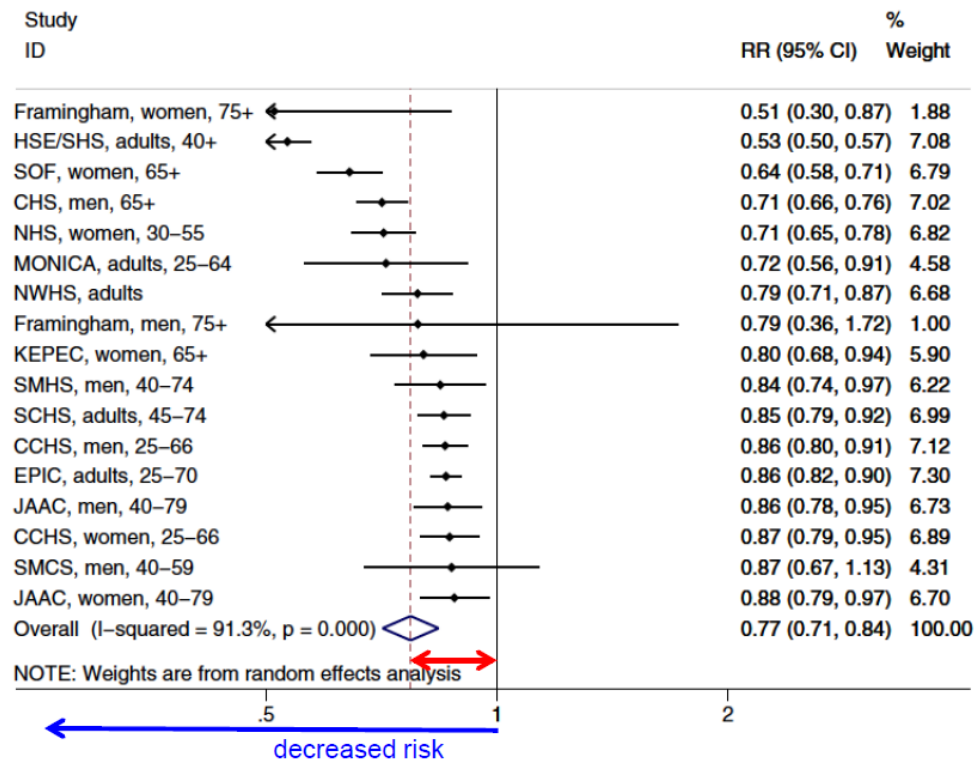
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# Inactivity and cardiovascular mortality

(Wahid et al., 2016)

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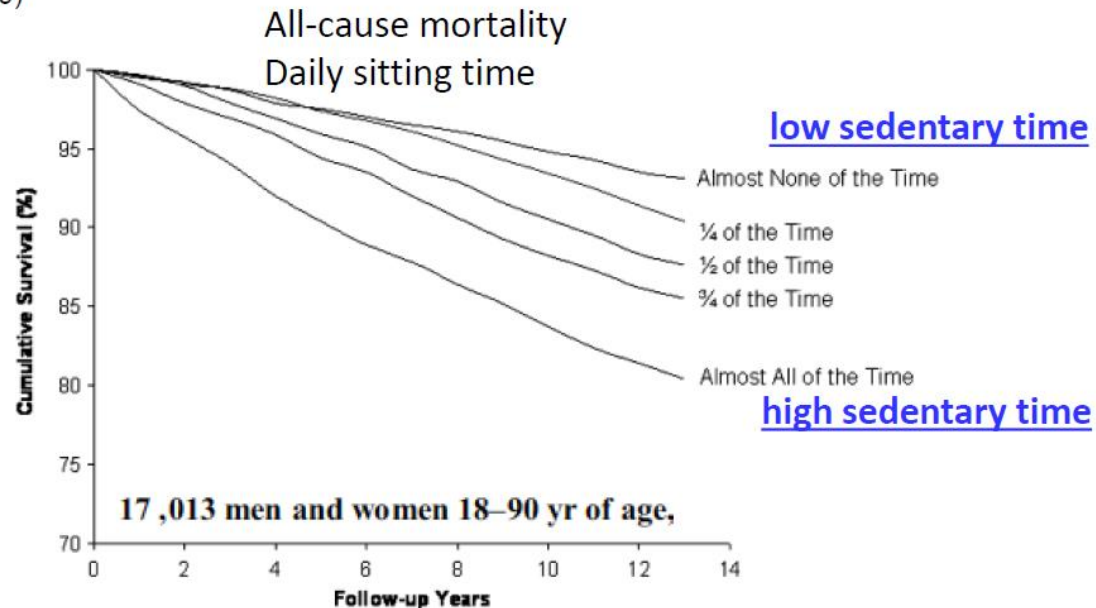


Decrease of the risk of cardiovascular mortality  
by 23% if recommendations for PA are met.

## Sedentary and cardiovascular mortality

|                                                 | Almost None<br>of the Time | One Fourth<br>of the Time | Half of<br>the Time | Three Fourths<br>of the Time | Almost All<br>of the Time | P for Trend |
|-------------------------------------------------|----------------------------|---------------------------|---------------------|------------------------------|---------------------------|-------------|
| <i>Men and women combined</i>                   |                            |                           |                     |                              |                           |             |
| <i>N</i>                                        | 3022                       | 6652                      | 4379                | 2138                         | 822                       |             |
| Cardiovascular disease mortality                |                            |                           |                     |                              |                           |             |
| Deaths                                          | 72                         | 240                       | 244                 | 136                          | 67                        |             |
| Age-adjusted hazard ratio <sup>a</sup> (95% CI) | 1.00                       | 0.96 (0.74–1.26)          | 1.22 (0.93–1.59)    | 1.46 (1.09–1.95)             | 1.60 (1.14–2.25)          | <0.0001     |
| Multivariate hazard ratio (95% CI)              | 1.00                       | 1.01 (0.77–1.31)          | 1.22 (0.94–1.60)    | 1.47 (1.09–1.96)             | 1.54 (1.09–2.17)          | <0.0001     |

(Katzmarzyk et al., 2009)





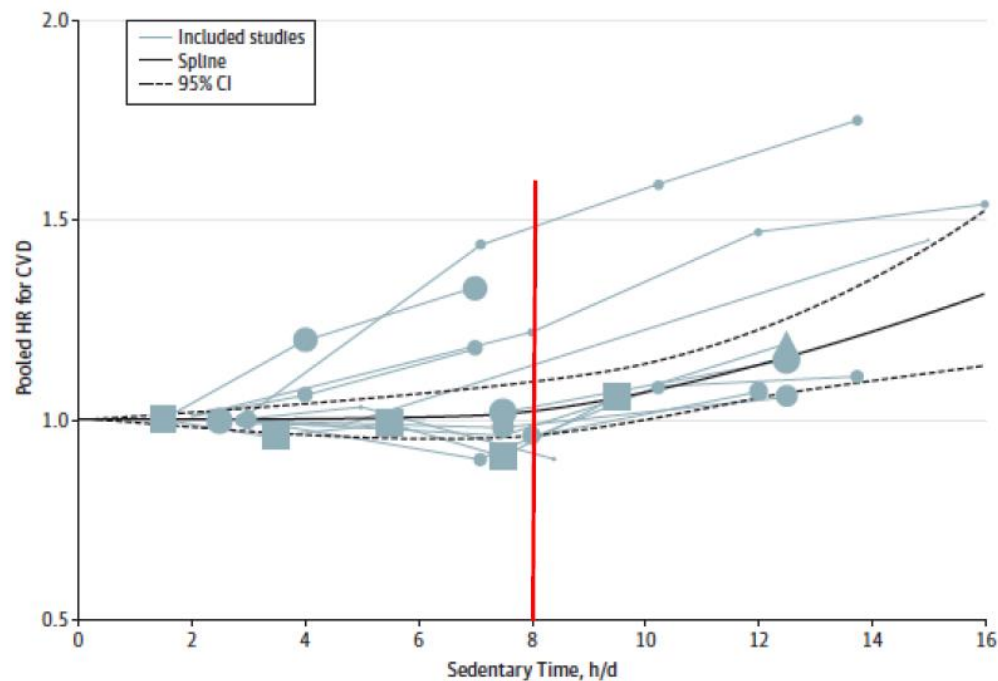
# Sedentary and incidence of cardiovascular diseases (Pandey et al., 2016)

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Daily sitting time.

Figure 2. Dose-Response Association Between Sedentary Time Duration and Risk for Cardiovascular Disease (CVD)



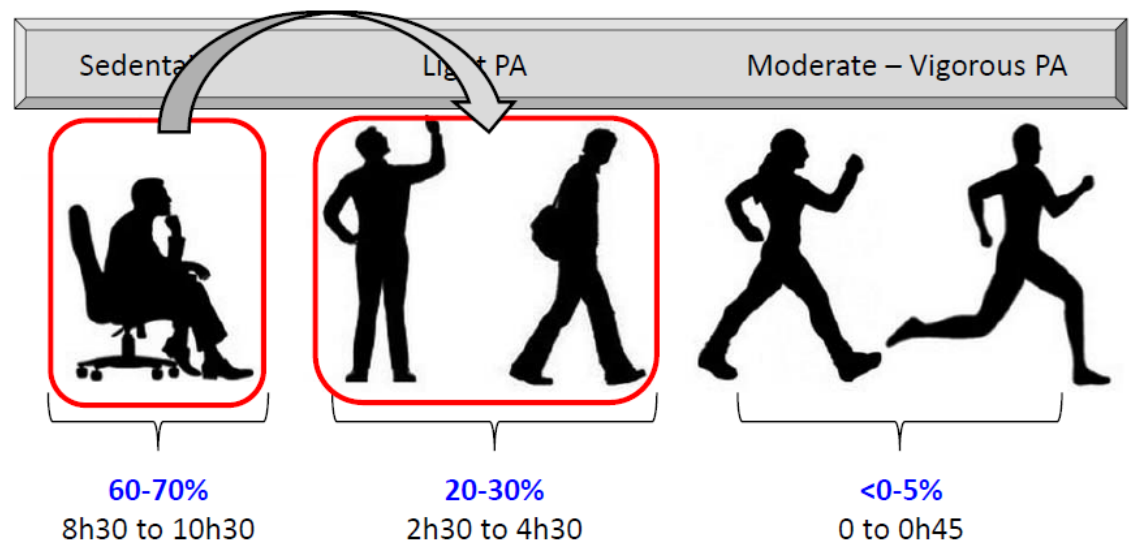
# Langes Sitzen...



Replacing 30 min/day sitting time with light physical activity,  
- decreases the risk of all-cause mortality by 17% to 20%

(Diaz et al., 2019 ; Fishman et al.,  
2016)

Decrease the amount of time spent in  
daily sedentary behavior  
(job, leisure, etc.)



# Exercise Prescription for Health

(Scand J Med Sci Sports 2015: (Suppl. 3) 25: 1-72)

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## Exercise as medicine – evidence for prescribing exercise as therapy in 26 different chronic diseases

B. K. Pedersen<sup>1</sup>, B. Saltin<sup>2</sup>

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### INTRODUCTION

Methods

### PSYCHIATRIC DISEASES

Depression

Anxiety

Stress

Schizophrenia

### NEUROLOGICAL DISEASES

Dementia

Parkinson's disease

Multiple sclerosis

### METABOLIC DISEASES

Obesity

Hyperlipidemia

Metabolic syndrome

Polycystic ovarian syndrome

Type 2 diabetes

Type 1 diabetes

### CARDIOVASCULAR DISEASES

Cerebral apoplexy

Hypertension

Coronary heart disease

Heart failure

Intermittent claudication

### PULMONARY DISEASES

Chronic obstructive pulmonary disease

Bronchial asthma

Cystic fibrosis

### MUSCULO-SKELETAL DISORDERS

Osteoarthritis

Osteoporosis

Back pain

Rheumatoid arthritis

### CANCER

Perspective

Acknowledgements

References



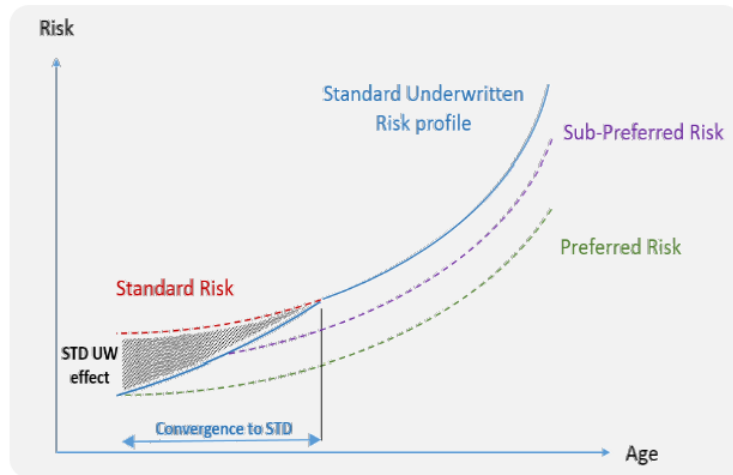
## BAM | A First Step Towards Dynamic Underwriting

### Standard underwriting effect

Discount at onset,  
vanishing over time



Converge to Standard risk profile

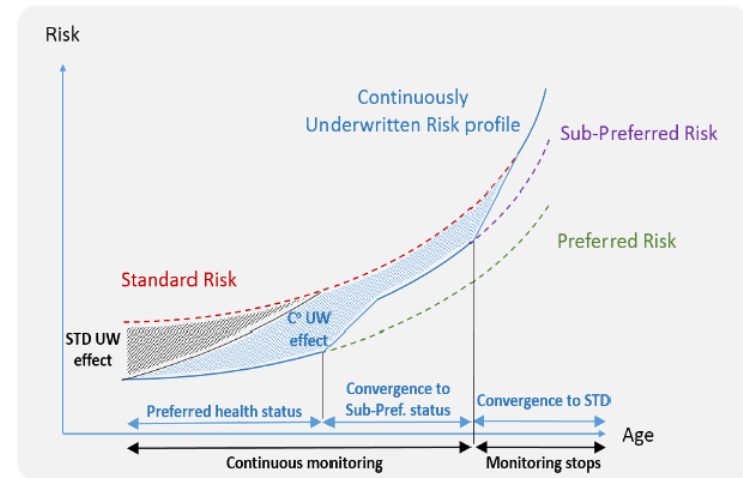


### Continuous underwriting effect

Discount at onset, maintained over time,  
until condition worsen or monitoring stops



Price never exceeds standard terms



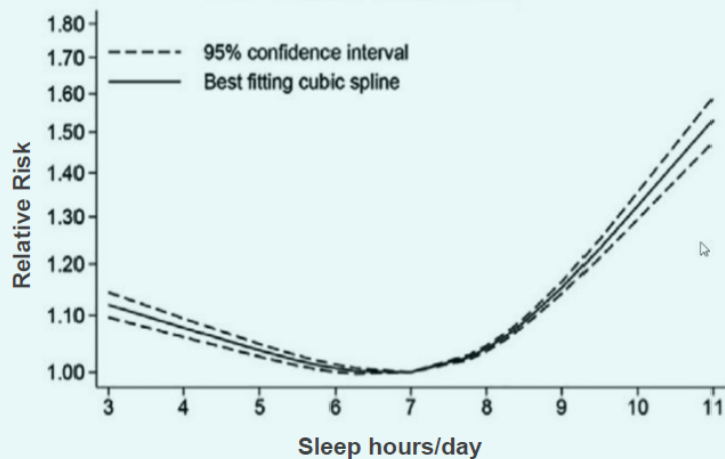




## BAM V2 | Established Clinical Evidence



### Sleep duration and risk of all-cause mortality



Yin, Jiawei, et al. "Relationship of sleep duration with all-cause mortality and cardiovascular events: A systematic review and dose-response meta-analysis of prospective cohort studies." *Journal of the American Heart Association* 6.9 (2017): e005947.

### Hazard Ratios for CVD-Deaths according to Categories of Sleep Duration

| Mean Sleep Duration (hours/day) | Low Physical Activity (<39.3*) | Medium Physical Activity (39.3 – 44.2*) | High Physical Activity (>44.2*) |
|---------------------------------|--------------------------------|-----------------------------------------|---------------------------------|
| < 6                             | 1.45                           | 1.23                                    | 1.54                            |
| 6.6 – 7.4                       | 1.00                           | 1.00                                    | 1.00                            |
| > 8                             | 1.41                           | 0.84                                    | 0.73                            |

\*MET hours/day

Bellavia, A., et al. "Sleep duration and survival percentiles across categories of physical activity." *American journal of epidemiology* 179.4 (2014): 484.



# Wohin des Weges?

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## BAM | A Solution Addressing Customers Painpoints

### From...



#### **Tedious & invasive underwriting**

Biometric screening is time consuming and costly



#### **One size fits all**

Assumed all insureds within a group will live their lives in the same fashion



#### **Absence of engagement**

Policy application and claims are the only interactions with policyholders

### To...



#### **Simple & accurate underwriting**

Accurate risk prediction.  
No medical examinations



#### **Tailored approach**

Continuous risk assessment and potential premium discounts



#### **Continuous engagement & wellness promotion**

Engages and motivates insureds to live a healthier life

# Ausblick

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Life & Health Club, Zürich Partner Re  
Bruno Soltermann

2.März 2020







# **Closing Keynote**

## **Changing landscape of Insurance Medicine: Getting ready for the future challenges and opportunities**

Professor Dr Joachim Breuer

**International Committee for Insurance Medicine**  
13 November 2019 | Mumbai, India

[www.issa.int](http://www.issa.int)



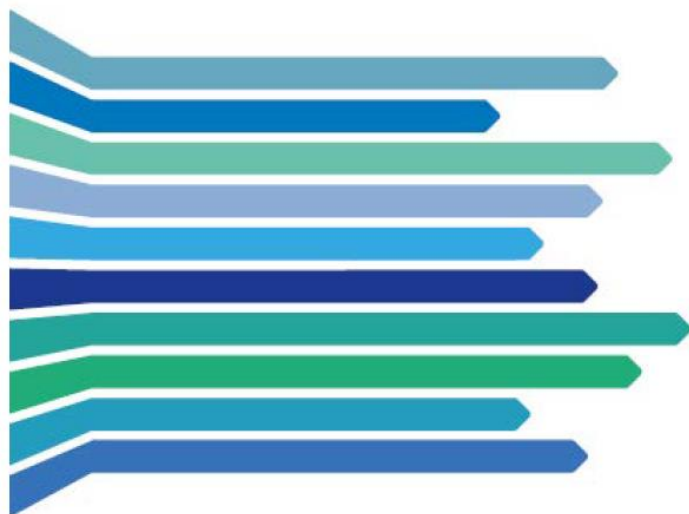
issa

INTERNATIONAL SOCIAL SECURITY ASSOCIATION

# 10 GLOBAL CHALLENGES FOR SOCIAL SECURITY

Developments and innovation

2019



[www.issa.int/10](http://www.issa.int/10)

**CHALLENGE 1** Health and long-term care

**CHALLENGE 2** Closing the coverage gap

**CHALLENGE 3** Population ageing

**CHALLENGE 4** The technological transition

**CHALLENGE 5** Higher public expectations

**CHALLENGE 6** Employment of young workers

**CHALLENGE 7** Labour markets and the digital economy

**CHALLENGE 8** Inequalities across the life course

**CHALLENGE 9** New risks, shocks and extreme events

**CHALLENGE 10** Protection of migrant workers



Promoting excellence  
in social security

## Technological transition



Sources: <https://i.pinimg.com/236x/b5/26/a3/b526a326fc1d30e3351e930d1fc7a4f6--wheelchairs-robotics.jpg>  
<https://killerinnovations.com/unusual-path-to-medical-innovation-ra-medicals-dean-irwin/>  
<https://www.informationweek.com/mobile/10-medical-robots-that-could-change-healthcare/d/d-id/1107696>

[www.issa.int](http://www.issa.int)

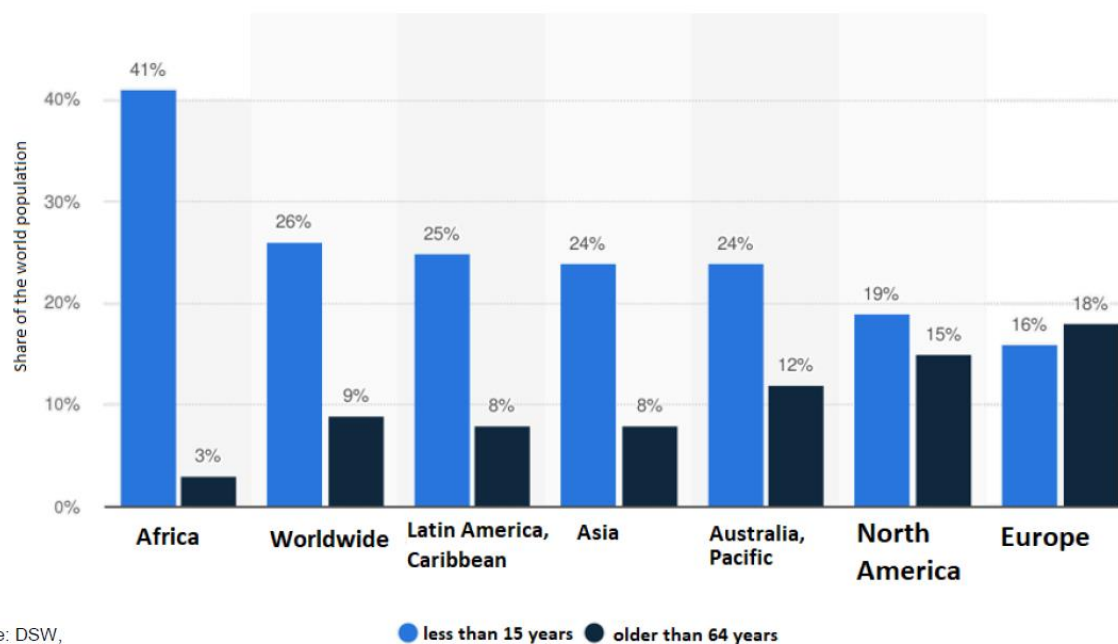


12



Promoting excellence  
in social security

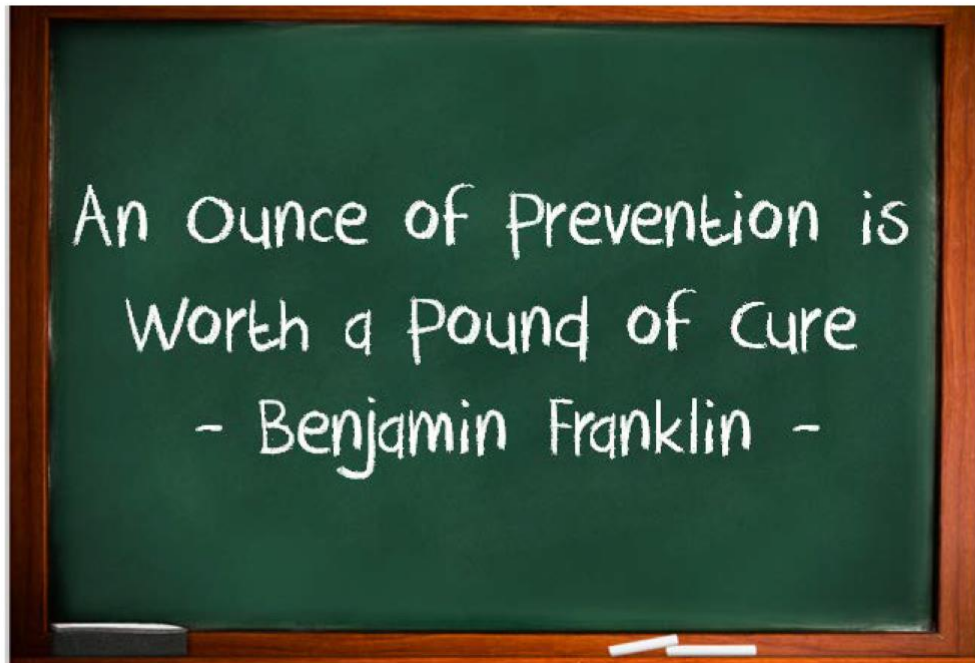
Share of the world population aged minor 15 and over 64 in the world regions in the year 2018





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in social security

## Disease Prevention Programs



<https://www.flashbackdata.com/an-ounce-of-prevention-is-worth-a-pound-of-cure/>

[www.issa.int](http://www.issa.int)



15



# Tanzen als lustvolle Prävention

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Tanz im Altersheim


Von re



Tanzen verbessert das Gleichgewicht und vermindert den Knochen und Muskelschwund

Tanzen fordert geistige Beweglichkeit und Aufmerksamkeit



 **2022  
TOKYO  
ICLAM** **ICLAM 2022 TOKYO**

**A new era of  
insurance medicine  
around the world**

**Dates**  
**Sunday, 16 October -  
Wednesday, 19 October, 2022**

**Venue**  
**Imperial Hotel Tokyo**

**Organizer**  
**ICLAM2022 Tokyo Congress  
National Organizing Committee**

**Secretariat**  
**c/o ISS, INC.**  
Mita MT Bldg, 8F, 3-13-12 Mita, Minatoku, Tokyo 108-0073 Japan  
TEL: +81-3-6369-9984 FAX: +81-3-3453-1180  
E-mail: secretariat@iclam2022tokyo.org

<https://www.iclam2022tokyo.org>

# Nächster Life & Health Club

## Risikoeinschätzungen bei Arrhythmien

9. November 2020, 17:30

Partner Re, Bellerivestrasse 36, Zürich



# Kursprogramm

## 9. Forum Risikoprüfung in der Personenversicherung

**Thema:** Autoimmunerkrankungen, Therapie mit monoklonalen Antikörpern, Begleitscheinungen bei Immuntherapien in der Onkologie

**Moderation:** Dr. med. Philip Strasser, Swiss Life AG  
Dr. med. Bruno Soltermann, SVV

**Kursort:** Swiss Re Centre for Global Dialogue, Gheistrasse 37, 8803 Rüschlikon  
**Kursdatum:** Donnerstag, 23. April 2020

| ZEIT          | INHALT                                                                           | REFERENT                                                        |
|---------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------|
| 09.00 – 09.30 | Eintreffen / Anmeldung / Begrüssungskaffee                                       |                                                                 |
| 09.30 – 09.40 | Einleitung                                                                       | Vertreter Gastgeber /<br>Dr. P. Strasser /<br>Dr. B. Soltermann |
| 09.40 – 10.10 | Kardiale Begleitscheinungen bei Immuntherapien in der Onkologie                  | Dr. U. Widmer                                                   |
| 10.10 – 11.10 | Multiple Sklerose – Neue Therapien, Risiken für Tod und Invalidität              | Prof. Dr. A. Lutterotti                                         |
| 11.10 – 11.30 | Kaffeepause                                                                      |                                                                 |
| 11.30 – 12.30 | Entzündliche rheumatische Erkrankungen – Ein Update für die Versicherungsmedizin | Prof. Dr. D. Kyburz                                             |
| 12.30 – 13.45 | Mittagessen                                                                      |                                                                 |
| 13.45 – 14.45 | IBD: Inflammatory Bowel Disease                                                  | Prof. Dr. S. Vavricka                                           |
| 14.45 – 15.05 | Kaffeepause                                                                      |                                                                 |
| 15.05 – 16.05 | Therapie mit monoklonalen Antikörpern: Übersicht und Zukunft                     | PD Dr. D. Ziegenhagen                                           |
| 16.05 – 16.15 | Schlussbetrachtungen                                                             | Dr. P. Strasser /<br>Dr. B. Soltermann                          |