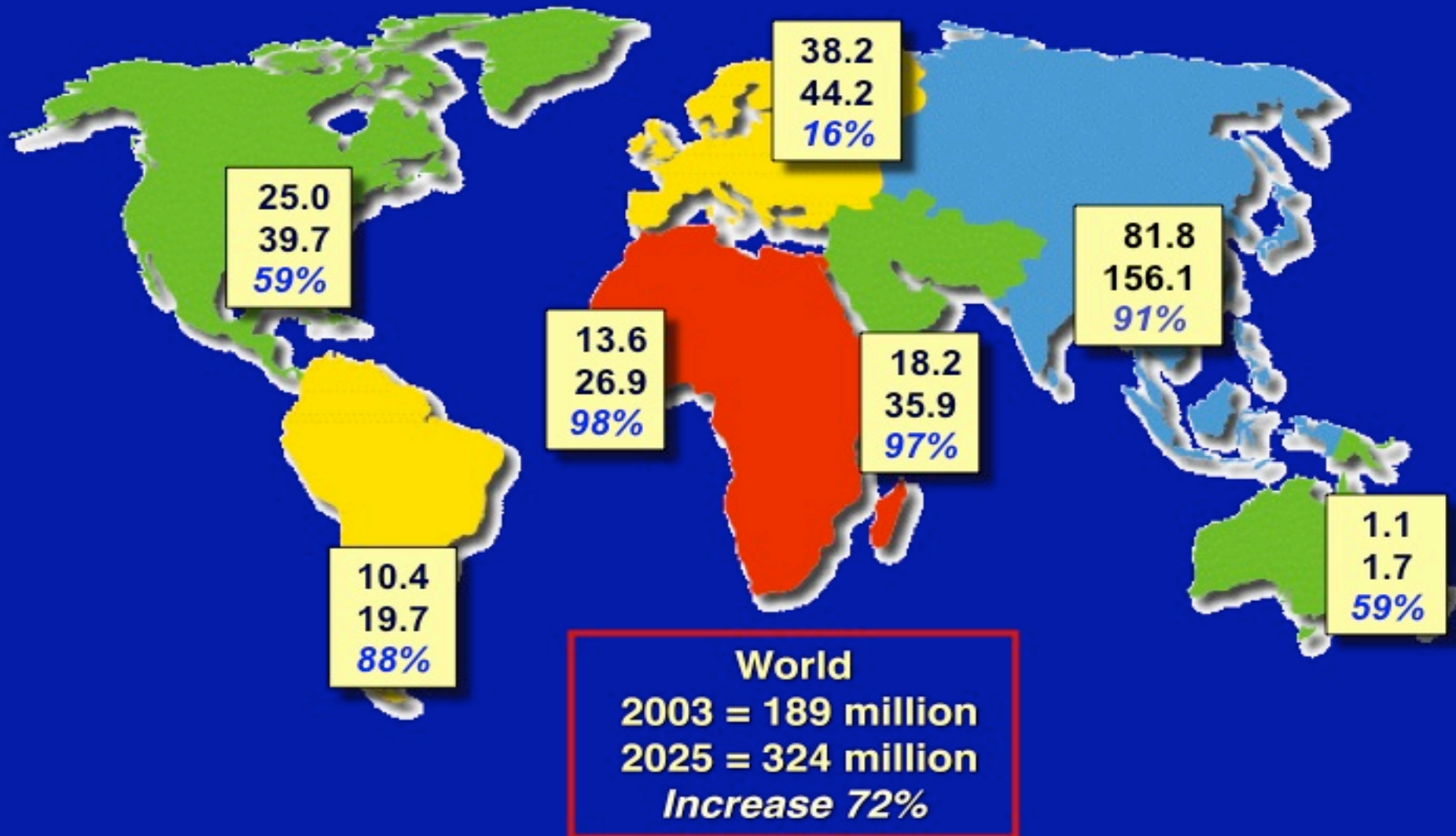


# NUTRITION AND DIABETES IMPACT FOR EMPLOYERS

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# GLOBAL PROJECTIONS FOR THE DIABETES EPIDEMIC: 2003-2025 (millions)



## Worst countries for Diabetes

### Top 10 countries/territories for age-standardised prevalence (%) of diabetes (20-79 years), 2013

COUNTRY/ TERRITORY	%
Tokelau	37.5
Federated States of Micronesia	35.0
Marshall Islands	34.9
Kiribati	28.8
Cook Islands	25.7
Vanuatu	24.0
Saudi Arabia	24.0
Nauru	23.3
Kuwait	23.1
Qatar	22.9

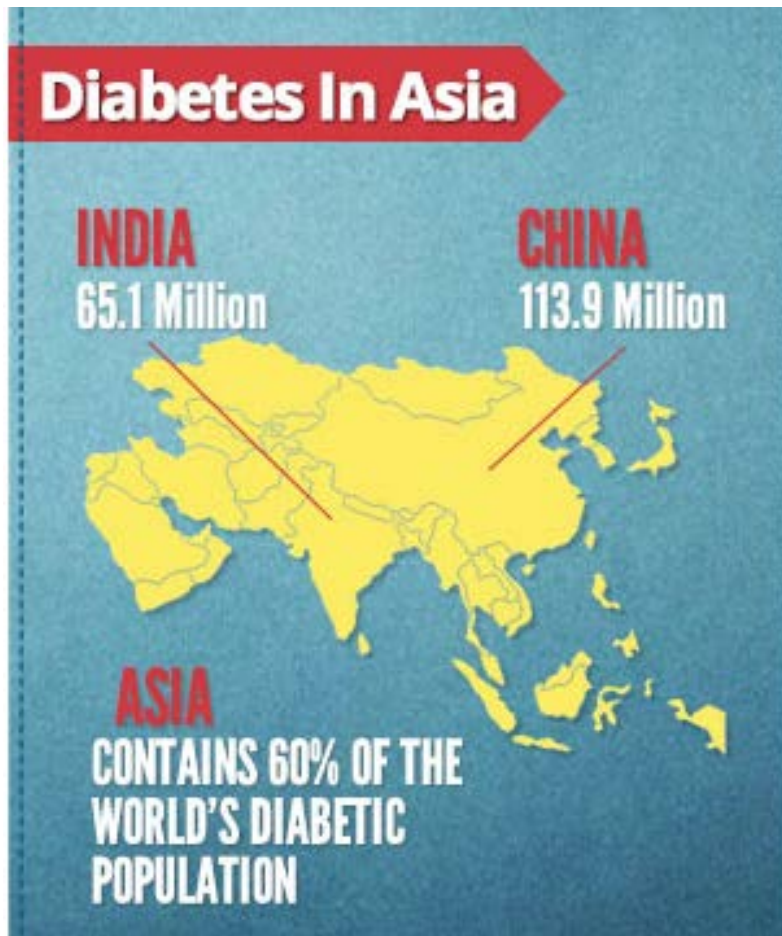
### Top 10 countries for number of people with diabetes (20-79 years) in million, 2013

COUNTRY/ TERRITORY	Million
China	98.4
India	65.1
United States of America	24.4
Brazil	11.9
Russian Federation	10.9
Mexico	8.7
Indonesia	8.5
Germany	7.6
Egypt	7.5
Japan	7.2

**World : 8% France : 6%**

IDF **DIABETES ATLAS**  
Sixth edition

● **Within 10 years...**



Sources: asiandiabetesprevention.org  
Challenges – Sept. 2013

- China will be the 2<sup>nd</sup> world economic power
- India will be 4<sup>th</sup> economic power



- **High impact of diabetes on your employees**
- **Huge economic consequences for your business**



## Physiology

- Long term bad habits- poor diet and (in)activity
- Easy access to calorically dense foods



- **Sustained positive energy balance:**
- A higher intake than expenditure of energy ( $\approx 1600\text{Kcal/day}$ ) promotes obesity and type 2 diabetes



## Professional & Social Consequences

Diabetes leads to complications such as:

- Cardiovascular, renal and retinal disease
- High mortality rate and early death
- Increased sick leave, hospitalization, disability, early retirement,...
- High increase in costs: 3 to 12 % of health resources in 10 years in France ≈20 billions €
- USA : 263 B; EU :147 B; ASIA : 88 B; AFRICA : 4 B

**Interaction between**

GENETIC



ENVIRONMENTAL FACTORS



Gene surgery  
Impact of new drugs on genes

Lifestyle changes ?



## Bad news: « Look AHEAD » study

11 years of follow-up

- 50,000 type 2 diabetic patients
- Discontinued due to « futility » (2012)
- « Lifestyle management fails to reduce hard cardio-vascular outcomes »

### 2 mistakes:

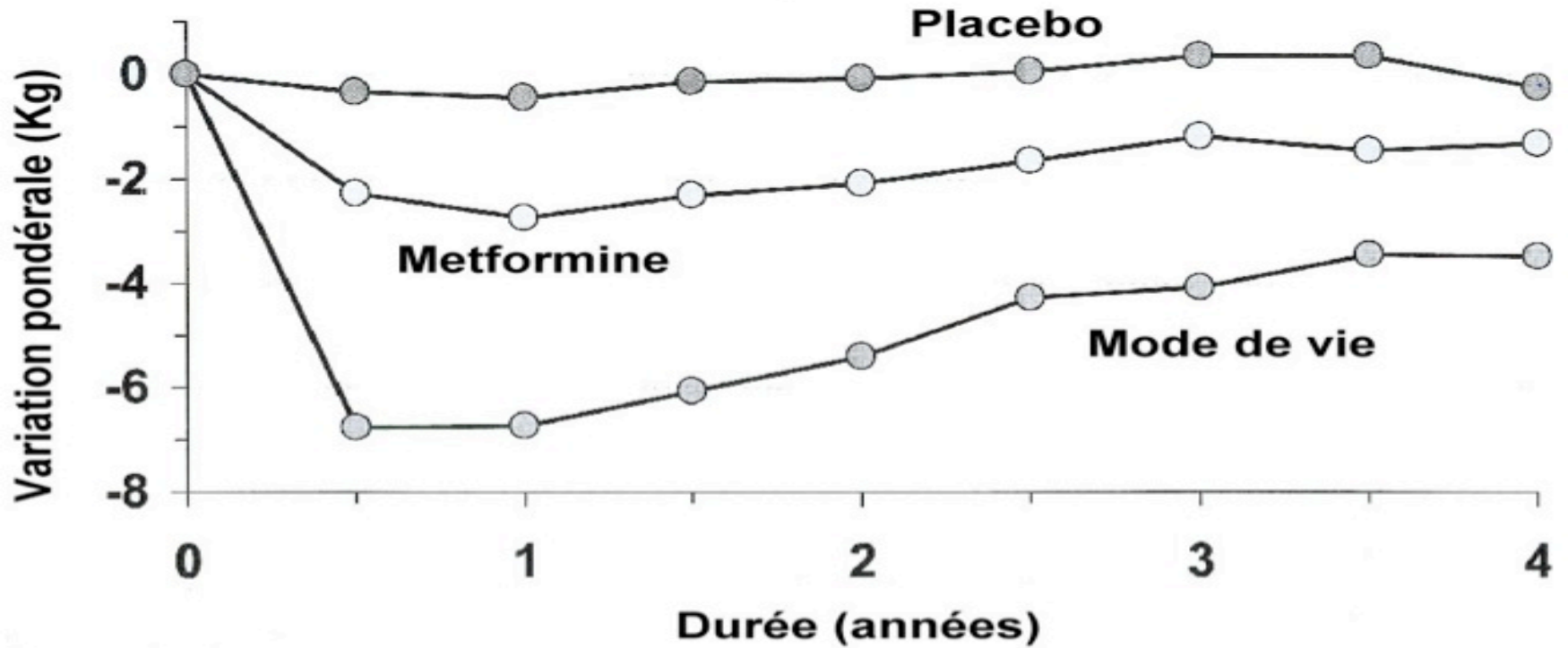
- Management fails to change lifestyle
- Already sick people (at a cost of \$220 millions)







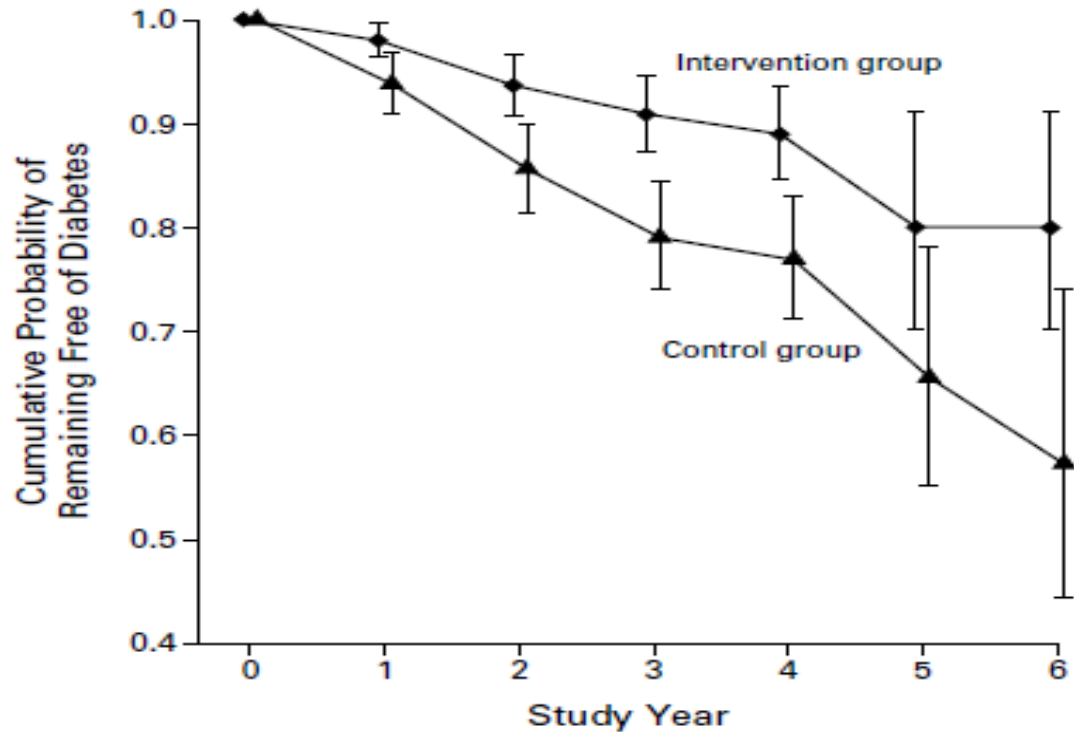
## Sustained effect of lifestyle improvement on weight loss



DPP Research Group, *NEJM* 346:393-403, 2002



# Sustained effect of lifestyle improvement on diabetes prevention



## SUBJECTS AT RISK

Total no.	507	471	374	167	53	27
Cumulative no. with diabetes:						
Intervention group	5	15	22	24	27	27
Control group	16	37	51	53	57	59



## Good news

**DA QING (1997), Diabetes Prevention Study (2001), Diabetes Prevention Program (2002)**

### **EFFICACY OF PRIMARY PREVENTION**

- **In male and female, whatever BMI > < 25**
- **Every age class, including « elderly » > 65 years**
- **In different ethnic and socio economic groups**
- **With**
  - minimal exercise (brisk walking, 150 min/week)
  - minimal weight lost of 7% (30% of caloric intake from fat)
- **No side effects**
- **More effective than any drug**

### **LONG LASTING EFFECTS**



### *WHO/WHEN/WHERE/HOW...*

- World (W.H.O. / ITU)
- Continents (ASIA)
- Countries (France, type 2 : 2,5 %→4,5 % in 10 years)
- Cities / Schools (Fleurbay, Laventie, Obépi Study)
- **FAMILY LEVEL 1**
- **EMPLOYERS 2,3**
- Target early intervention at genetically susceptible persons before they become overweight and sedentary

**1, 2 & 3 = « quick wins »**

# 1- Familial Prevention

Vous présentez un diabète de type 2 ?

**VOS ENFANTS** ont un risque important d'avoir eux-mêmes du diabète dès 40 ans ou même avant...

... mais ils peuvent **AGIR** dès l'enfance pour diminuer ce risque et

**EVITER DE DEVENIR DIABETIQUES**

Que faire ?

- éviter de grossir
- perdre quelques kilos s'il y a une surcharge de poids
- manger équilibré  
manger cinq légumes/fruits par jour  
préparer des repas peu gras  
manger régulièrement aux repas, mais éviter le grignotage
- éviter de boire des boissons sucrées (sodas...)
- avoir une activité physique régulière  
marcher ou faire du sport trente minutes par jour
- dépister le diabète par une prise de sang  
demander au médecin traitant de prescrire un contrôle du taux de sucre à jeun dès l'âge adulte

Pour plus d'information sur le diabète connectez-vous sur le site internet du service

[www.hegp.fr/diabeto](http://www.hegp.fr/diabeto)

**MIEUX VAUT PREVENIR QUE GUERIR!**

Es USTED diabético de tipo 2 ?

**SUS HIJOS** corren el gran riesgo de ser ellos mismos diabéticos a los 40 o incluso antes...

-Pero pueden **ACTUAR** desde la infancia para minimizar ese riesgo y

**EVITAR QUE SE VUELVAN DIABETICOS**

¿Qué hacer?

- Evite que engorden.
- Animales a perder unos cuantos kilos si hay sobrepeso.
- Mantenga una alimentación equilibrada para sus hijos:
  - Que consuman 5 frutas y/o verduras por día.
  - Prepare comidas poco grasas.
  - Que coman regularmente durante las comidas, pero sin comer entre horas.
  - Que eviten tomar bebidas azucaradas (sodas...).
- Incíteles a realizar una actividad física regularmente:
  - Caminar o hacer deporte mínimo media hora por día.
- Controle la diabetes frecuentemente con unos análisis sanguíneos:
  - Pídale a su medico generalista que le prescriba un análisis de glucosa en sangre en AYUNAS desde el final de la adolescencia.

Para más información sobre la diabetes, conéctese al sitio Web del servicio:

[www.hegp.fr/diabeto](http://www.hegp.fr/diabeto)

**MAS VALE PREVENIR QUE CURAR.**

## « QUICK WIN » 1

**أنتم مرضى بداء السكري ؟**

أبنائكم أيضا معرضون للإصابة بداء السكري في سن الأربعين أو حتى قبل ذلك. .... و لكن باستطاعتهم تجنب ذلك ، أو تقليل نسبة تعرضهم لهذا الداء منذ الصغر

ما العمل؟


- تجنبوا البدانة
- فقدان بعض الوزن في حالة البدانة
- تغذية متوازنة
  - تناول خمسة خضار و فواكه يوميا
  - تحضير وجبات قليلة الدسم
  - تناول وجبات منتظمة و تجنب الأكل بين هته الوجبات
  - تجنب المشروبات السكرية (المشروبات الغازية )
- ممارسة نشاطات رياضية و مستمرة
  - تخصيص 30 د يوميا للمشي أو ممارسة الرياضة
- تشخيص داء السكري عن طريق تحليل دموي
- إجراء فحص طبي لتشخيص داء السكري عند سن مبكرة بطلبه للطبيب المعالج .

للمزيد من المعلومات حول داء السكري إتصلوا بنا على الموقع الإلكتروني للمصلحة : [www.hegp.fr/diabeto](http://www.hegp.fr/diabeto)

**الوقاية خير من العلاج**

## 2- Type 2 Diabetes risk score


« quick win » 2

 Finnish Diabetes Association

### TYPE 2 DIABETES RISK ASSESSMENT FORM

Circle the right alternative and add up your points.

<p><b>1. Age</b></p> <p>0 p. Under 45 years                  2 p. 45–54 years                  3 p. 55–64 years                  4 p. Over 64 years</p> <p><b>2. Body-mass index</b>                  (See reverse of form)</p> <p>0 p. Lower than 25 kg/m<sup>2</sup>                  1 p. 25–30 kg/m<sup>2</sup>                  3 p. Higher than 30 kg/m<sup>2</sup></p> <p><b>3. Waist circumference measured below the ribs</b>                  (usually at the level of the navel)</p> <table border="0" style="width: 100%;"> <tr> <td style="text-align: center;">MEN</td> <td style="text-align: center;">WOMEN</td> </tr> <tr> <td>0 p. Less than 94 cm</td> <td>Less than 80 cm</td> </tr> <tr> <td>3 p. 94–102 cm</td> <td>80–88 cm</td> </tr> <tr> <td>4 p. More than 102 cm</td> <td>More than 88 cm</td> </tr> </table>	MEN	WOMEN	0 p. Less than 94 cm	Less than 80 cm	3 p. 94–102 cm	80–88 cm	4 p. More than 102 cm	More than 88 cm	<p><b>6. Have you ever taken medication for high blood pressure on regular basis?</b></p> <p>0 p. No                  2 p. Yes</p> <p><b>7. Have you ever been found to have high blood glucose (eg in a health examination, during an illness, during pregnancy)?</b></p> <p>0 p. No                  5 p. Yes</p> <p><b>8. Have any of the members of your immediate family or other relatives been diagnosed with diabetes (type 1 or type 2)?</b></p> <p>0 p. No                  3 p. Yes: grandparent, aunt, uncle or first cousin (but no own parent, brother, sister or child)                  5 p. Yes: parent, brother, sister or own child</p>
MEN	WOMEN								
0 p. Less than 94 cm	Less than 80 cm								
3 p. 94–102 cm	80–88 cm								
4 p. More than 102 cm	More than 88 cm								



<p><b>4. Do you usually have daily at least 30 minutes of physical activity at work and/or during leisure time (including normal daily activity)?</b></p> <p>0 p. Yes                  2 p. No</p> <p><b>5. How often do you eat vegetables, fruit or berries?</b></p> <p>0 p. Every day                  1 p. Not every day</p>	<p><b>Total Risk Score</b></p> <p><input type="checkbox"/> The risk of developing type 2 diabetes within 10 years is</p> <table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">Lower than 7</td> <td>Low: estimated 1 in 100 will develop disease</td> </tr> <tr> <td>7–11</td> <td>Slightly elevated: estimated 1 in 25 will develop disease</td> </tr> <tr> <td>12–14</td> <td>Moderate: estimated 1 in 6 will develop disease</td> </tr> <tr> <td>15–20</td> <td>High: estimated 1 in 3 will develop disease</td> </tr> <tr> <td>Higher than 20</td> <td>Very high: estimated 1 in 2 will develop disease</td> </tr> </table> <p style="text-align: right; font-size: small;">Please turn over</p>	Lower than 7	Low: estimated 1 in 100 will develop disease	7–11	Slightly elevated: estimated 1 in 25 will develop disease	12–14	Moderate: estimated 1 in 6 will develop disease	15–20	High: estimated 1 in 3 will develop disease	Higher than 20	Very high: estimated 1 in 2 will develop disease
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15–20	High: estimated 1 in 3 will develop disease										
Higher than 20	Very high: estimated 1 in 2 will develop disease										

## 3- Gestational Diabetes

« quick win » 3

Target : young working women in your companies

Glucose intolerance with onset during pregnancy

Mothers at high risk for the development of diabetes after pregnancy  
(X 7, 30% within 10 years, 20% of new cases of type 2)

An ideal situation for **telehealth follow up**

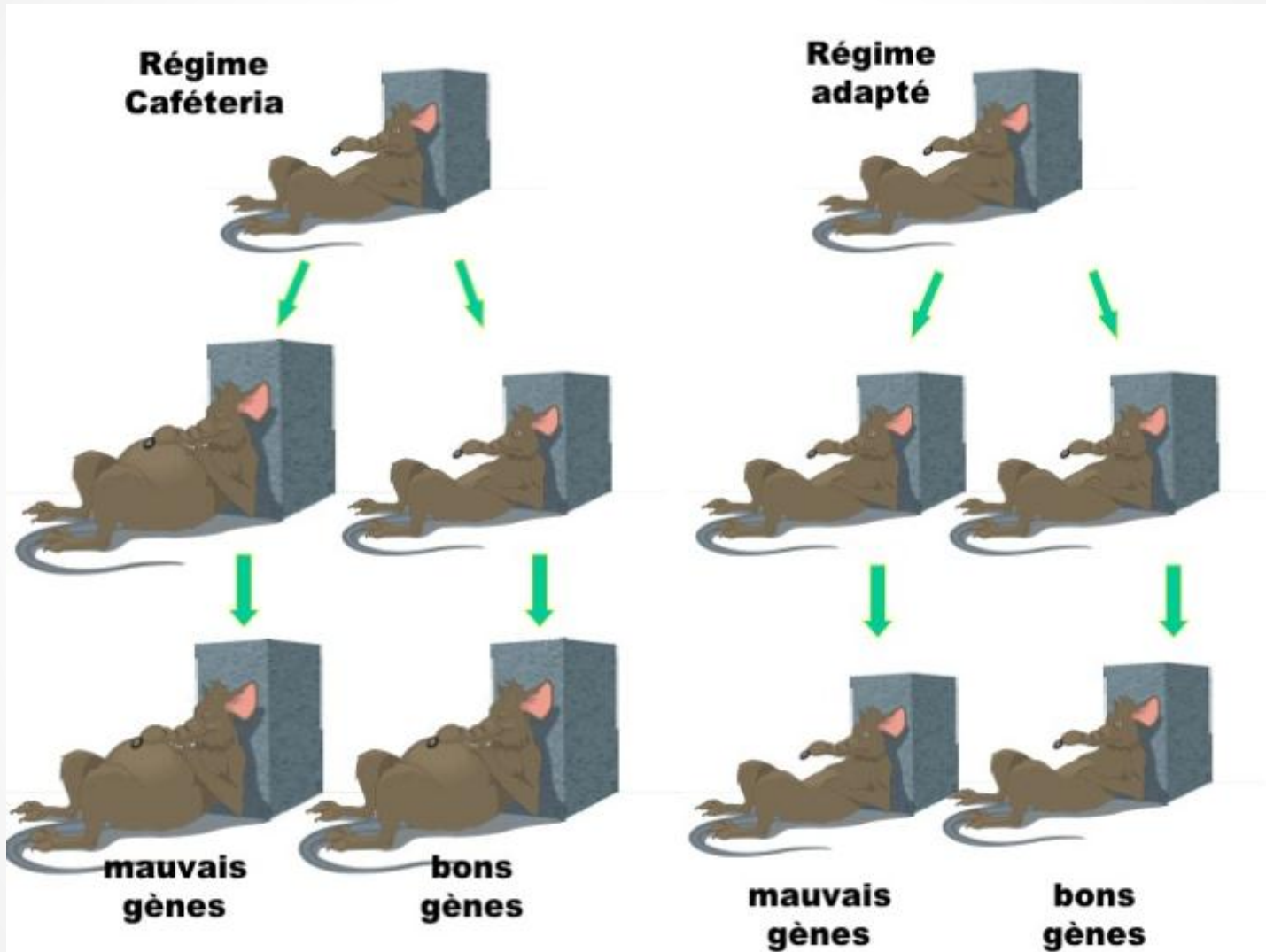
- During the pregnancy: homogeneous clinical, biological and therapeutical situation
- After pregnancy: highly motivated young women with nutritional knowledge fighting a disease that can be reversed

Afternoon workshop: « **Be4Life** »





# Environment vs Genes



# Yes We Can

**MERCI et bienvenue à Paris**



**Undernutrition** is also a terrible problem...



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