



# A new strategy to optimize iodine intake in Belgium

R. Moreno-Reyes  
Université Libre de Bruxelles



# A new strategy to optimize iodine intake in Belgium

1. Current iodine status in Belgium
  - Old and new epidemiological data
  
2. Strategy to optimize iodine intake
  - Progressive
  - Selective
  - Monitored

# TOPOGRAPHIE MÉDICALE

DE LA

## BELGIQUE.

---

### ÉTUDES

DE GÉOLOGIE, DE CLIMATOLOGIE, DE STATISTIQUE

ET  
D'HYGIÈNE PUBLIQUE;

PAR

LE DOCTEUR MEYNNE,  
Médecin militaire,  
Membre de quelques Sociétés médicales,  
Chevalier de l'Ordre de Léopold  
et de  
plusieurs Ordres étrangers.

---

BRUXELLES,  
H. MANCEAUX, IMPRIMEUR-LIBRAIRE,  
RUE DE L'ÉTUVE, 20.

1865

# LIVRE III.

—  
RAPPORTS

ENTRE LES MALADIES

ET

LE SOL, LE CLIMAT, LA MISÈRE, ETC.

Le goitre n'offre pas chez nous un haut degré d'endémicité

§ 206. — *Goîtres.* — Nous n'avons pas de données sur leur fréquence relative dans les diverses parties du pays; cependant il est certain que ces infirmités sont incomparablement plus communes dans la zone méridionale, que dans les deux autres zones.

Ces causes ont été recherchées dans de nombreux travaux, et cependant c'est encore aujourd'hui une question qui est loin d'être résolue. On a tour à tour accusé l'air, le sol, les eaux...

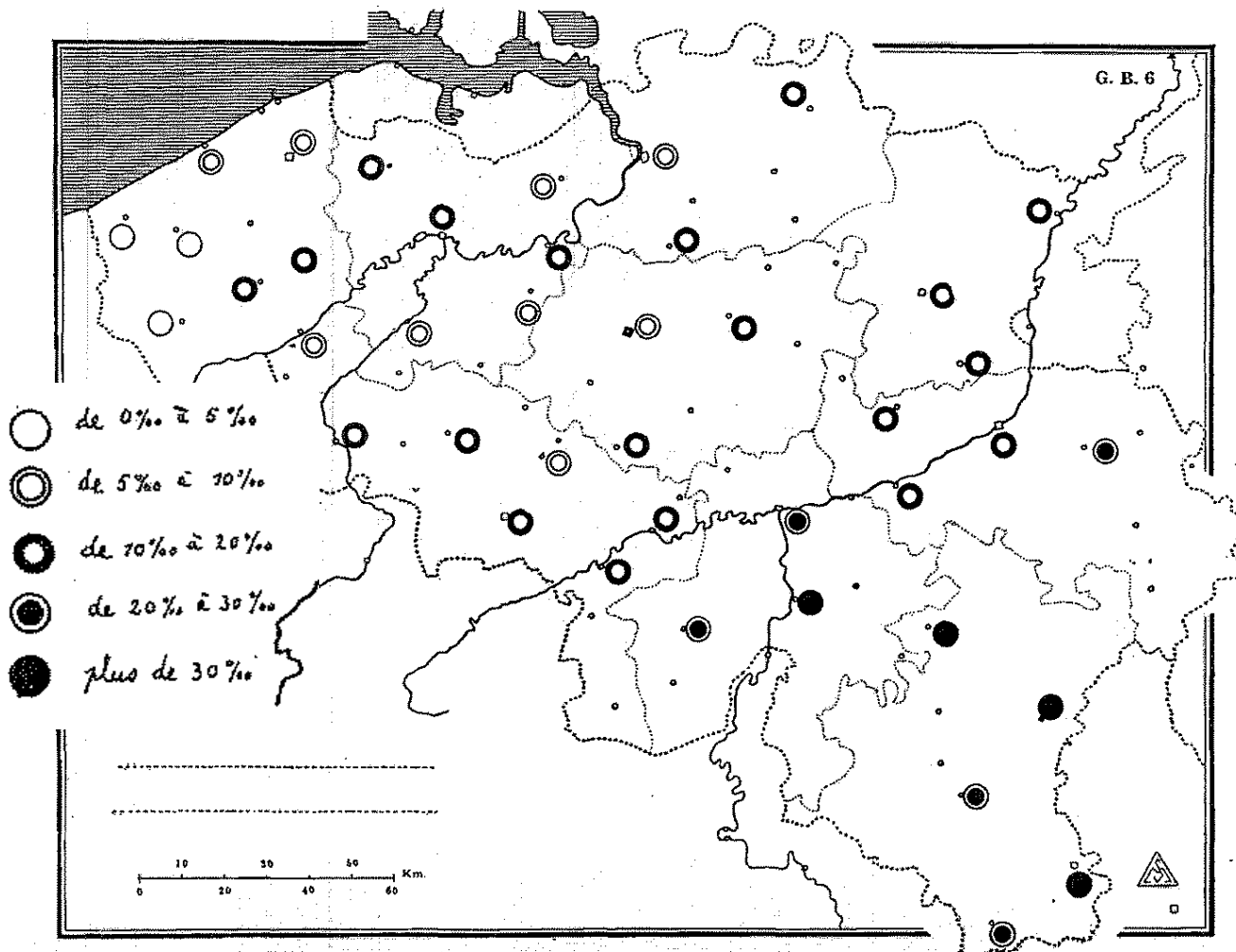
... d'autres ont porté leur attention sur l'absence de l'iode.



# Répartition et fréquence du goître chez les recrues en Belgique

par L. BRULL et L. DEWART

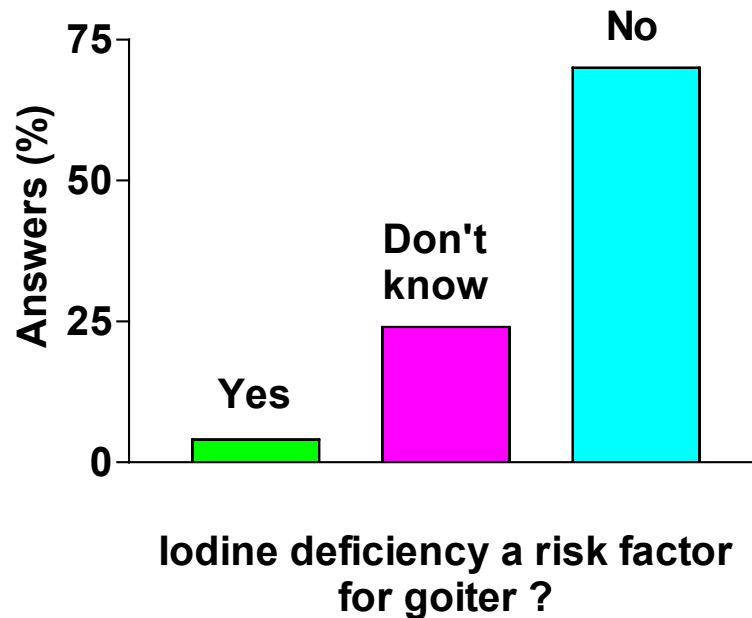
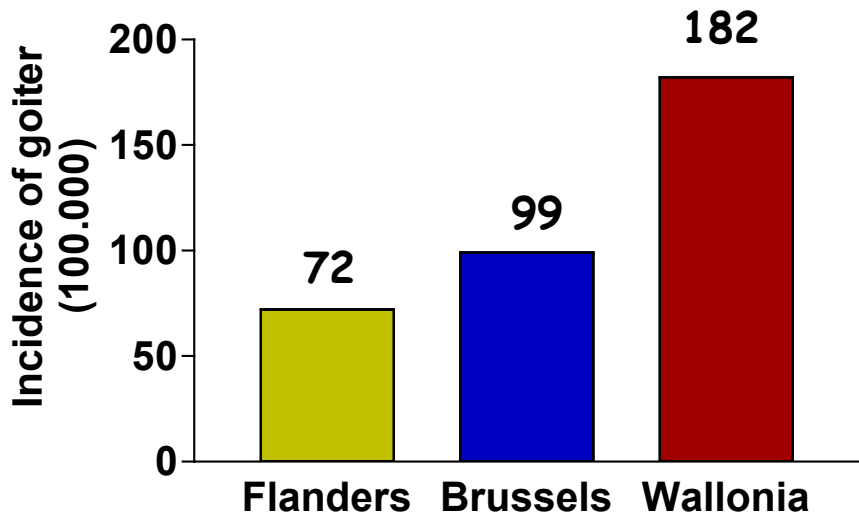
Institut de Clinique et de Policlinique médicales (Prof. L. Brull)





# Incidence of goiter in Belgium as assessed by a network of sentinel general practitioners

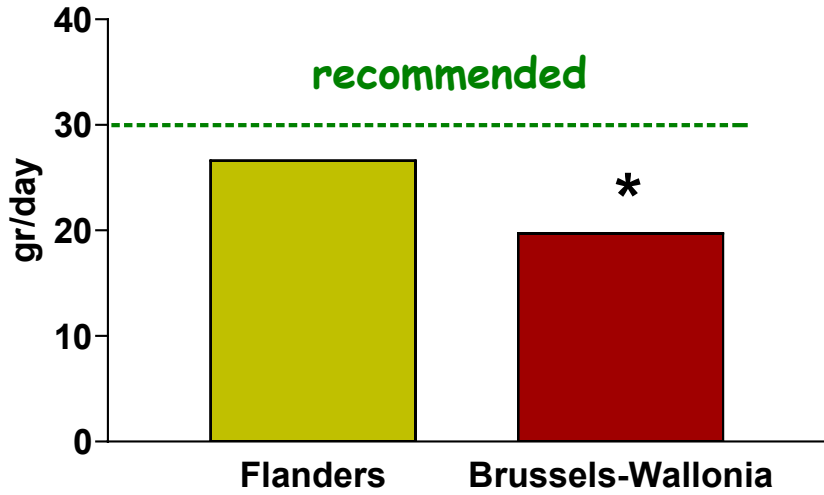
$P < 0.001$



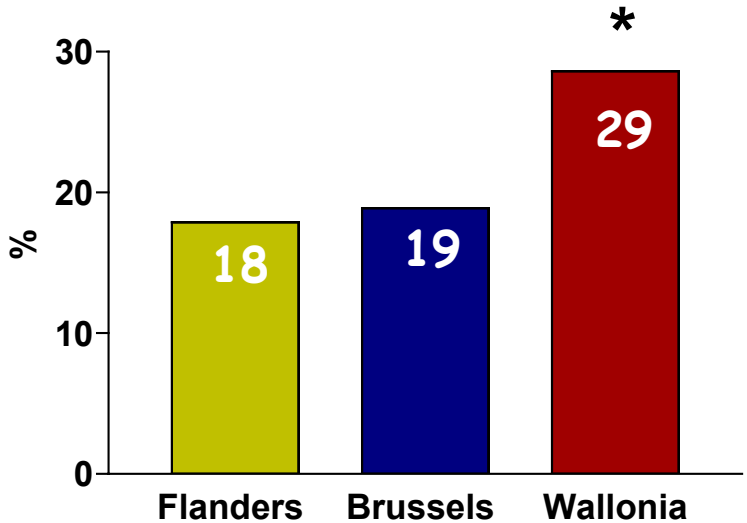


# Belgian food consumption survey 2004

70 % of the population does not consume the recommended amount of seafood



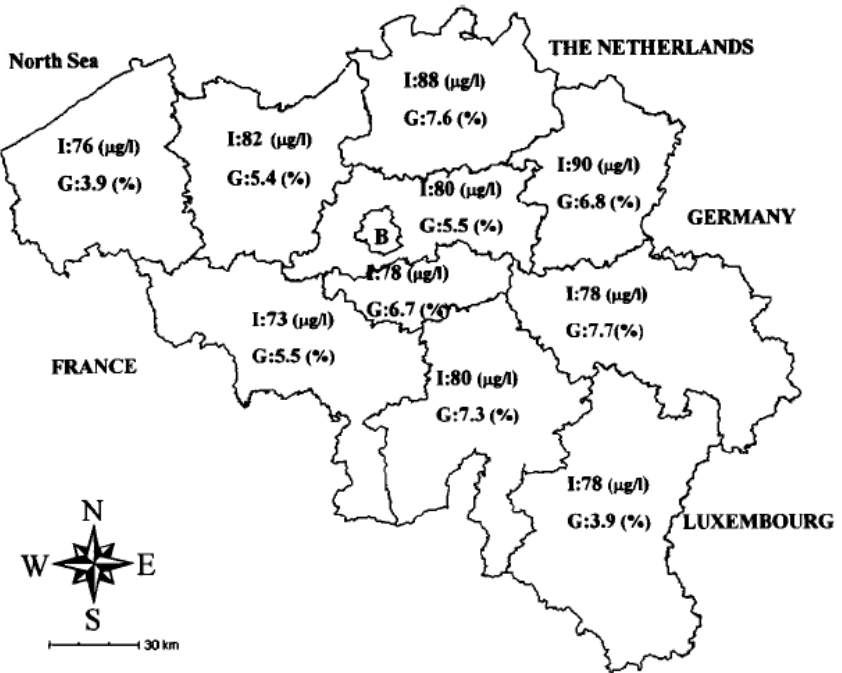
Daily consumption of seafood



Subjects who almost never consume seafood



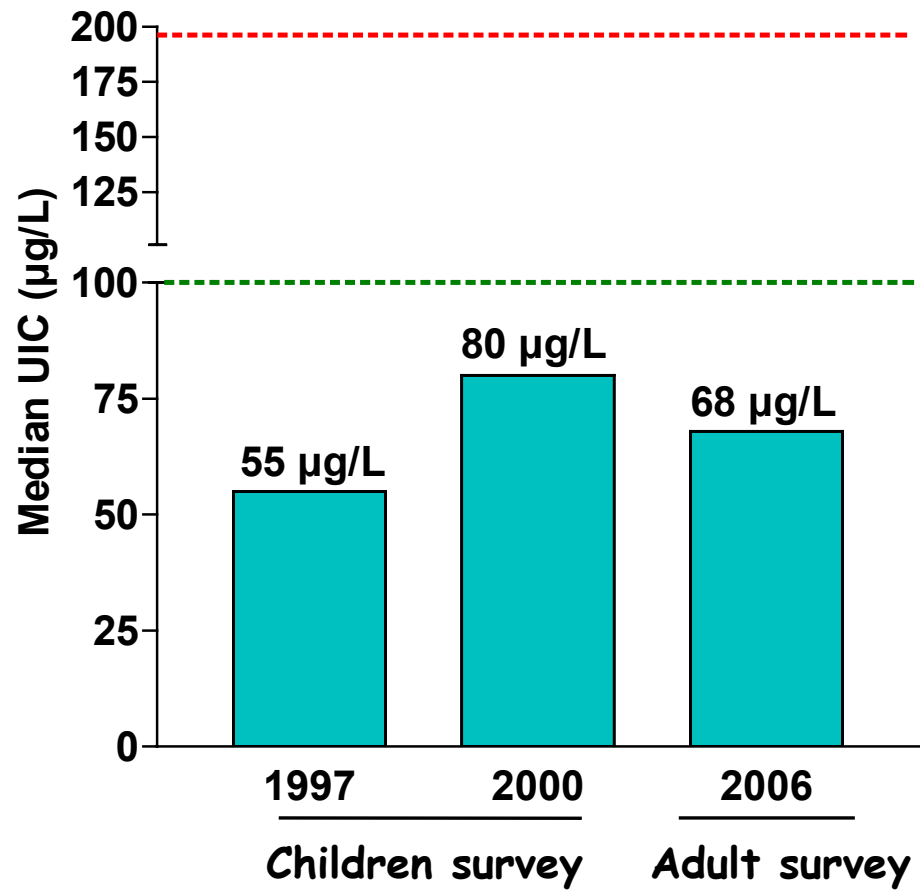
# Prevalence of goiter and median UIC in children



- No difference in the prevalence of G and in the median UIC between the regions
- Nutritional profile of children differs from that of adults
- Child iodine intake  $\neq$  Adult iodine intake
- Child survey  $\neq$  Adult survey
- Monitoring iodine status: children and adults



# Median urinary iodine concentrations in Belgium

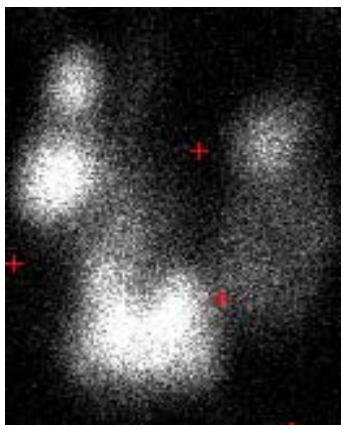
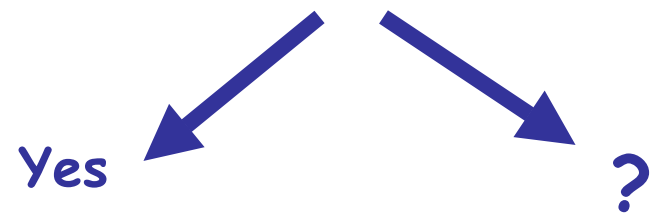


Mild iodine deficiency (MID):  
50-99 µg/L

Delange et al, Eur J Endocrinol 1997  
Delange et al, Eur J Endocrinol 2000  
Moreno-Reyes et al, ETA meeting 2009



# Does mild iodine deficiency matter ?



**Thyroid nodules and MNG**

1. Diagnostic procedures
2. Therapy: medical, surgical or metabolic ( $^{131}\text{I}$ )



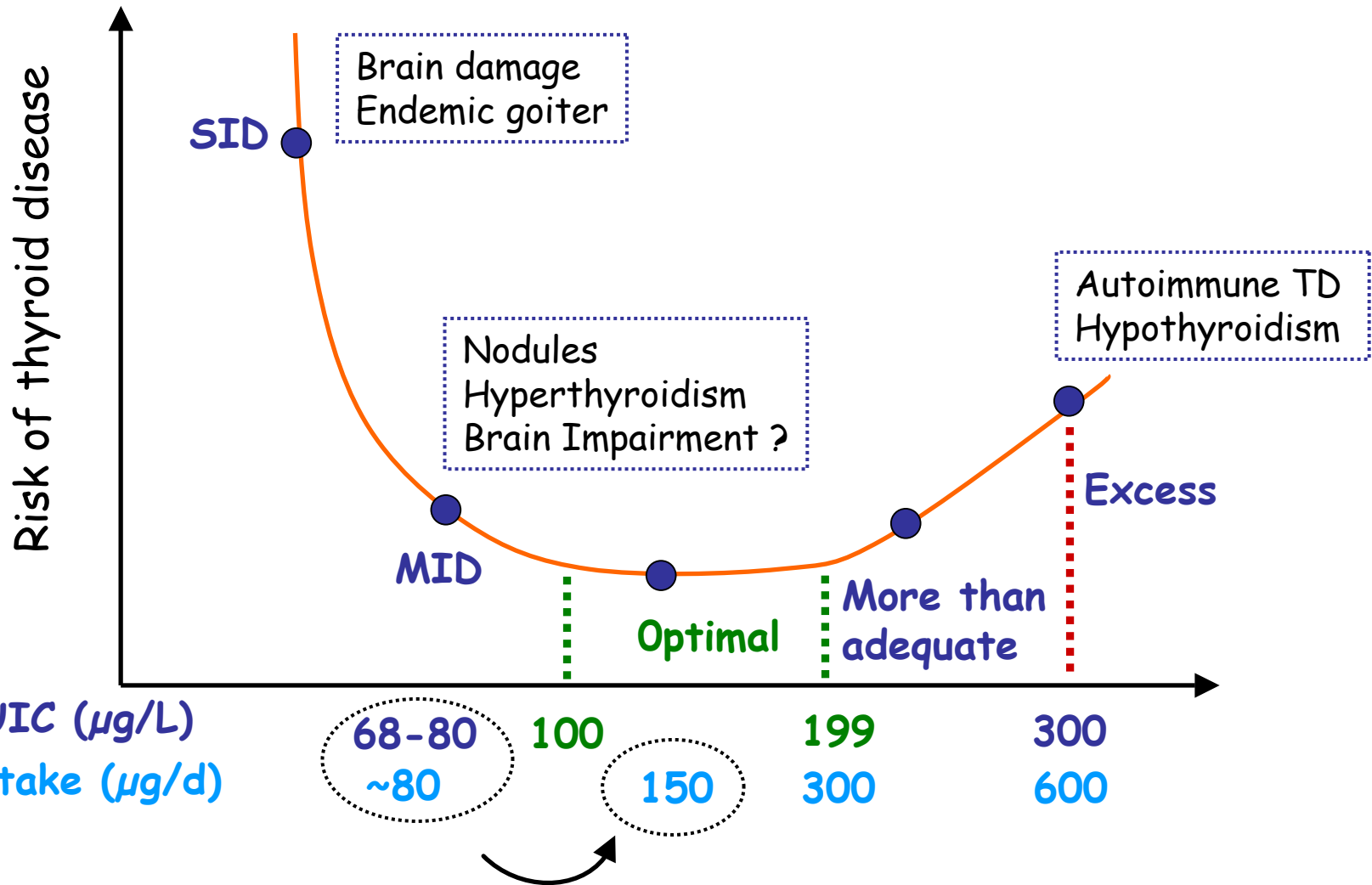
**Prevents children from attaining their full intellectual potential**

**Precautionary principle !**

**MID should be corrected not only in pregnant but also in women of childbearing age**



# Iodine intake and risk of thyroid diseases



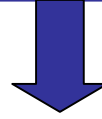
## Progressive



Step-by step increase of I intake starting with an I content in salt of 10-15 ppm.

To decrease the risk of hyperthyroidism

## Selective



Fortification of bread with iodized salt :

- Consumed by the majority of the population
- Main source of salt: ~2g /d
- Easier to control the I content of one food item
- Easy to implement: local production of bread, little extra cost.
- Iodine losses are negligible
- Success history: Denmark

Fortification of other foodstuffs with iodine should be avoided or tightly regulated

## Monitored



Assess efficacy

Adapt I content in salt

Maintain optimal I intake



# Gradual increase of iodine intake in bread

## Step 1: 10-15 ppm I

Bread  
~ 26  $\mu\text{g}$  I/d

Table salt  
~ 13  $\mu\text{g}$  I/d

~ 40  $\mu\text{g}$  I/d

Current intake:  
80  $\mu\text{g}$  I/d

~ 120  $\mu\text{g}$  I/d

## Step 2: 15-20 ppm I

Bread  
~ 36  $\mu\text{g}$  I/d

Table salt  
I unchanged

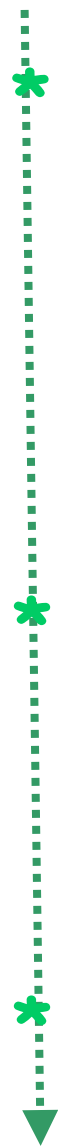
~ 36  $\mu\text{g}$  I/d

~150  $\mu\text{g}$  I/d

Base-line  
survey 2010

Survey 2015

Survey 2020



# Strategy for optimizing iodine intake in Belgium

