

# Impact of overweight on the burden of non-communicable diseases in Belgium: the WaST project

Vanessa Gorasso<sup>1,2</sup>, Delphine De Smedt<sup>2</sup>, Stefanie Vandevijvere<sup>1</sup>, Eva De Clercq<sup>1</sup>, Johan Van der Heyden<sup>1</sup>, Kris Doggen<sup>1</sup>, Brecht Devleeschauwer<sup>1,2</sup>

<sup>1</sup> Sciensano, Brussels, Belgium; <sup>2</sup> Ghent University, Ghent, Belgium – corresponding author: [Vanessa.gorasso@sciensano.be](mailto:Vanessa.gorasso@sciensano.be)

## Lesson and key messages

- Musculoskeletal disorders have a considerable burden in Belgium. In **2018**, a **total of 287,431 DALYs** were estimated for the entire Belgian population.
- **A high BMI contributes largely to this burden.** In particular, 25% of the osteoarthritis burden of health is attributed to excessive weight in Belgium.
- Integrating these results into **evidence-based policies** could provide to governments and partners a **key tool for effective health interventions.**

## Issue and description of the problem

Excess weight status is one of the main metabolic risk factors for non-communicable diseases. According to the Belgian health interview survey (HIS 2018), **49.3% of the adult population suffered from overweight.** Despite the great national burden, **there is no comprehensive nutritional and physical activity health plan in Belgium.** The **WaST project** aims to assess the contribution of excess weight status to the **societal impact of disability and multi-morbidity of non-communicable diseases**, and to **model and compare** the potential impact of **health policies.** The outcomes will be used to support the implementation of evidence-based policies for preventing excessive weight in Belgium.

## Methods

Three musculoskeletal disorders were included as considered of relevance for the burden attributable to excess weight status: **low back pain (LBP), neck pain (NKP) and osteoarthritis (OA).** The study involved:

- **Years lived with disability (YLDs)** – no mortality outcome:
  - (I) Estimation of **prevalent cases was derived from the HIS 2018**, including adult population only;
  - (II) **Disability weights** were derived from the Global Burden of Disease study (GBD 2017);
- **Attributable burden:**
  - (I) **Relative risks for high body mass index (BMI)** [defined as BMI greater than 25 kg/m<sup>2</sup>] were obtained from GBD 2017;
  - (II) **Continues BMI** was derived from the **Belgian health examination survey (HES) 2018.**

## Results

Initial results concern the Belgian **disease burden of musculoskeletal disorders** in terms of **disability-adjusted life years (DALYs)** (Figure 1). In total, LBP, NKP and OA generated respectively 143,432, 77,933 and 66,066 DALYs in 2018.

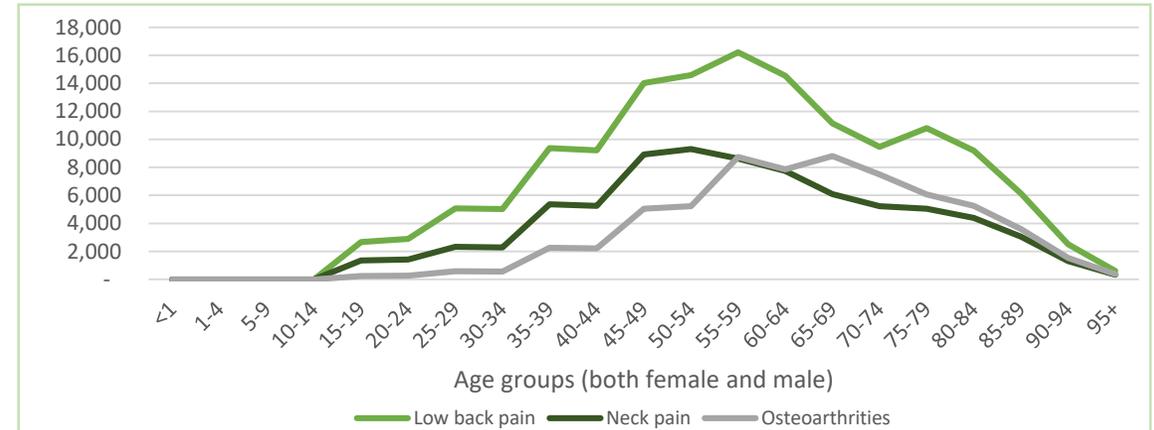


Figure 1: DALYs in Belgium in 2018 by disorder and age group

Table 1 shows the **burden attributable to high BMI** based on the observed nutritional status of the Belgian population.

|                | National mean relative risk | Population attributable fraction | Attributable burden in DALYs |
|----------------|-----------------------------|----------------------------------|------------------------------|
| Low back pain  | 1.09                        | 8.48%                            | 12,160                       |
| Neck pain      | 1.09                        | 8.11%                            | 6,322                        |
| Osteoarthritis | 1.33                        | 25.01%                           | 16,526                       |

Table 1: Computation of high BMI attributable burden in 2018 by disorder

## Key words

Excess weight status - health impact assessment - evidence-based policies