

Vicenza, 4 novembre 2016



**Corso di formazione**

**Corso di formazione  
sugli ambulatori  
nutrizionali dei  
Servizi di Igiene degli  
Alimenti e Nutrizione  
della Regione Veneto**

# obesità e disturbi dell'alimentazione

Massimo Cuzzolaro

già Università di Roma Sapienza

Editor-in-Chief di *Eating and Weight Disorders. Studies on Anorexia Bulimia Obesity*

# global human population growth

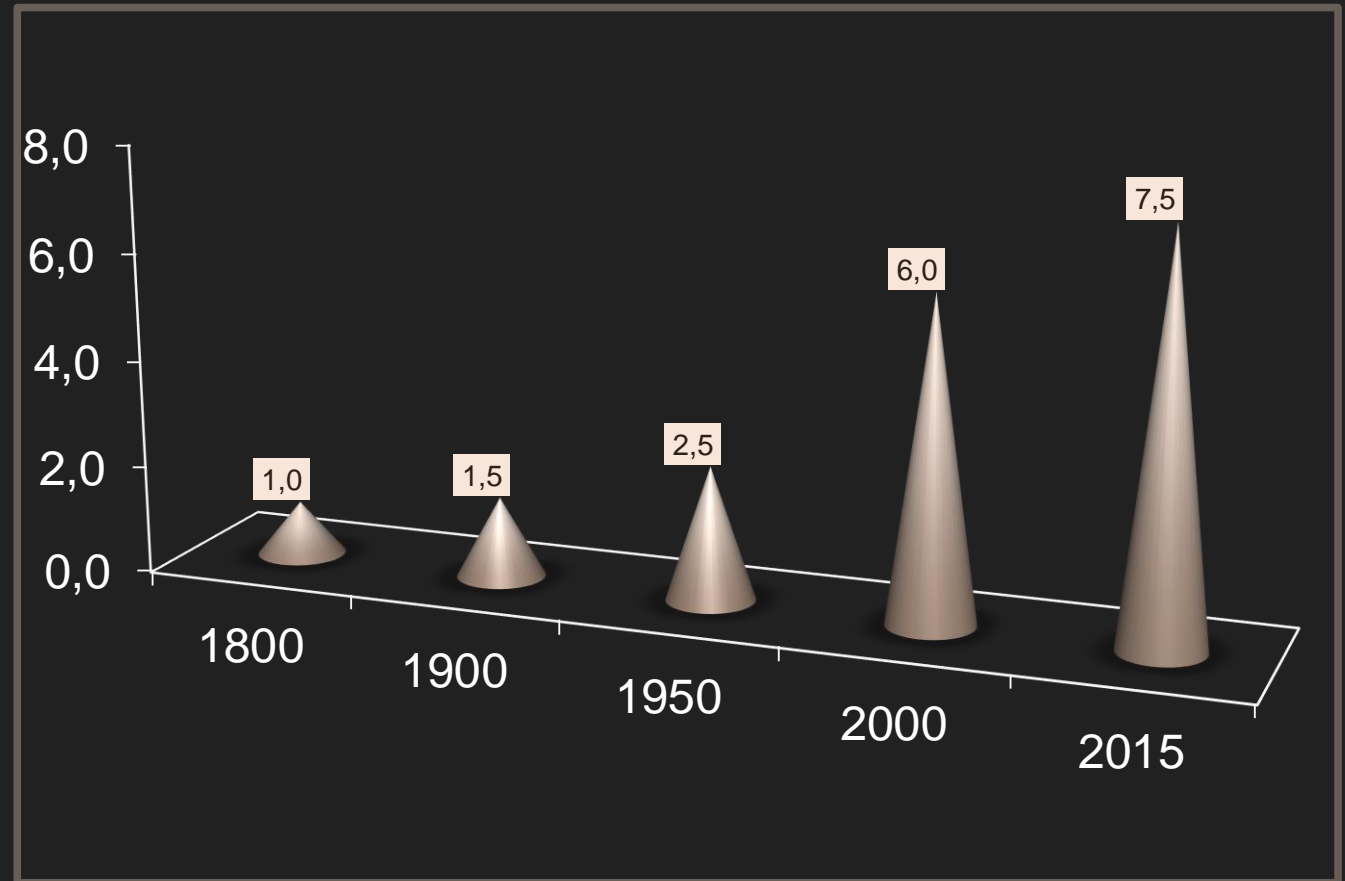
(<http://www.worldometers.info/world-population/#pastfuture>)

*2015 world  
population:  
about 7.5 billion*

*It is currently  
growing (births -  
deaths) at 2.4 people  
per second*

*will we be  
9.6 billion people  
by 2050?*

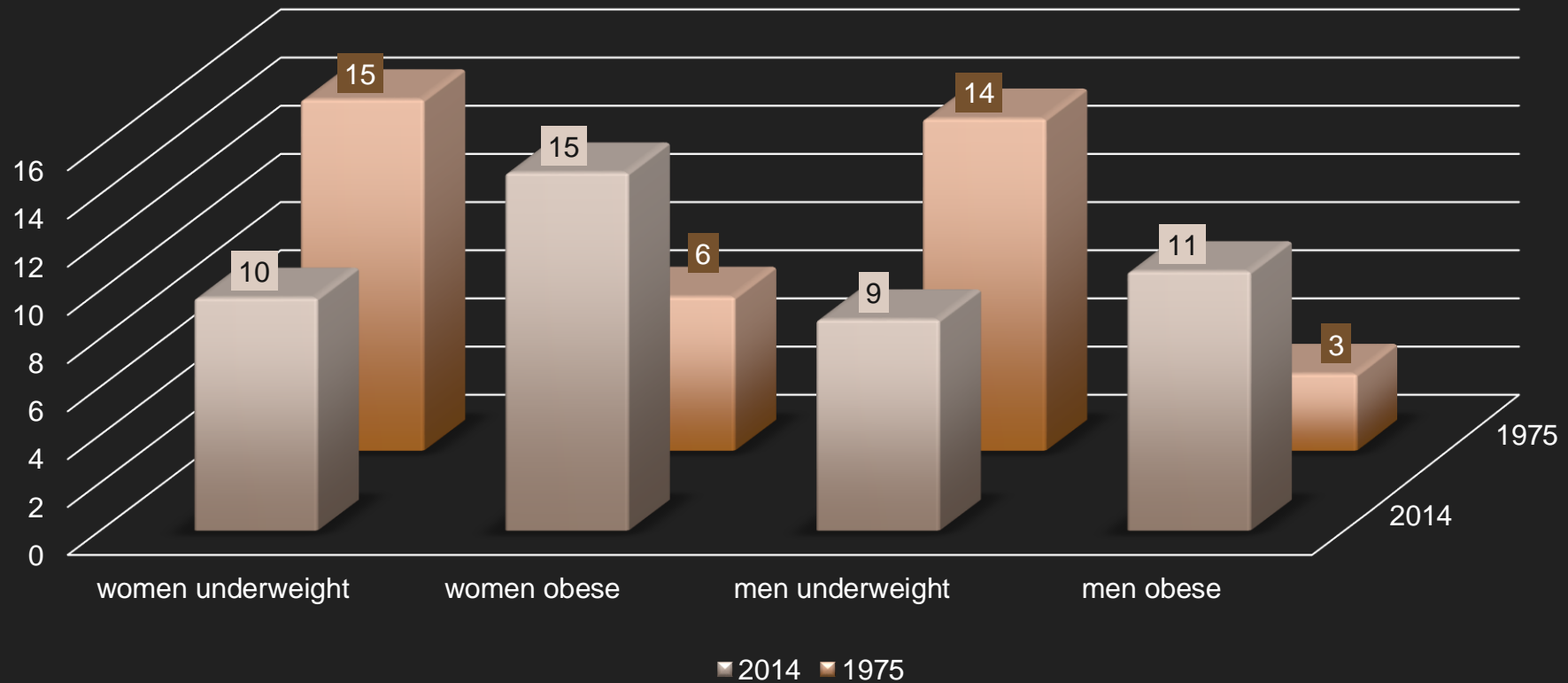
global human population: billions



# obesity is now more common than underweight worldwide

(NCD Risk Factor Collaboration, *Lancet*, 2016)

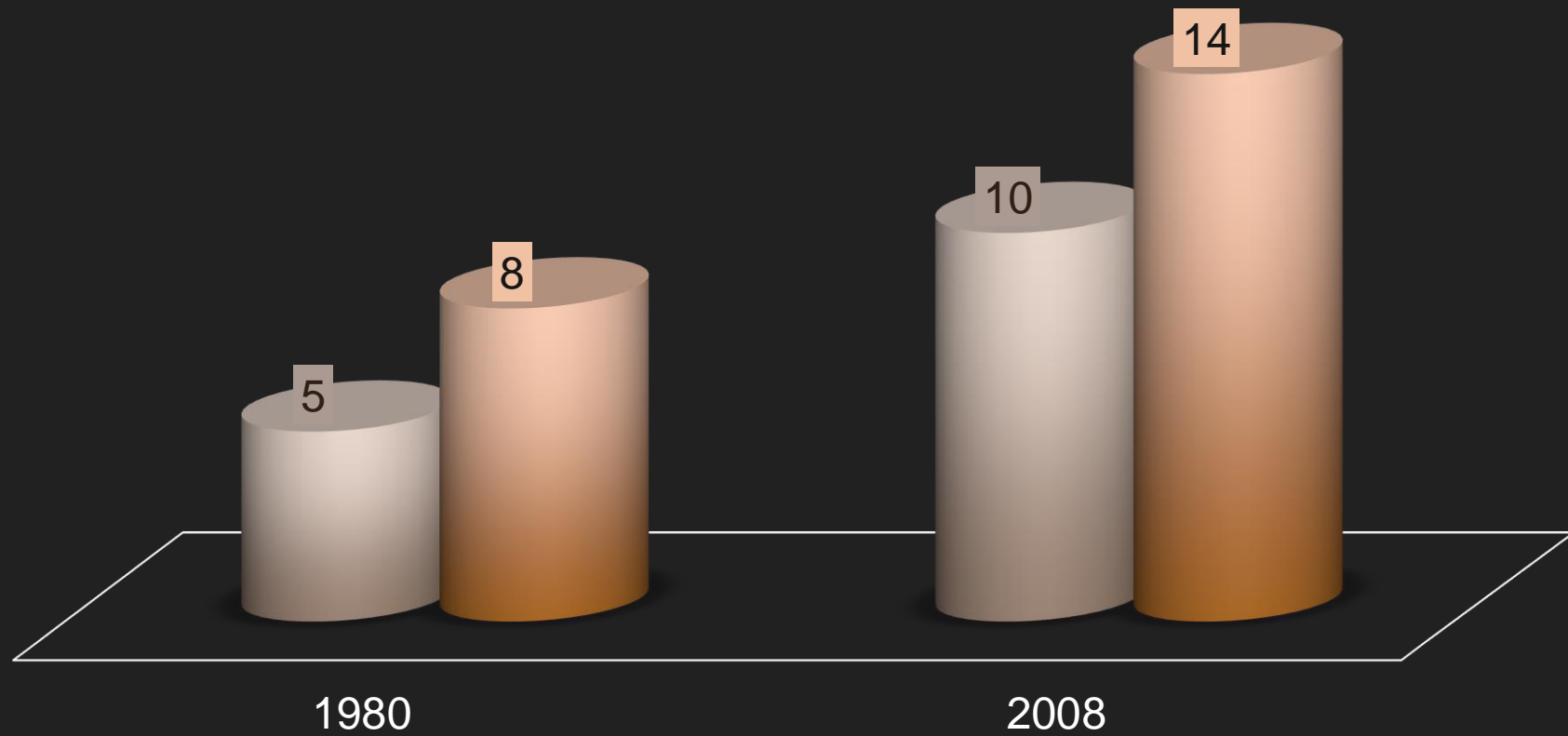
## age-standardised prevalences (%)



# global trends in BMI

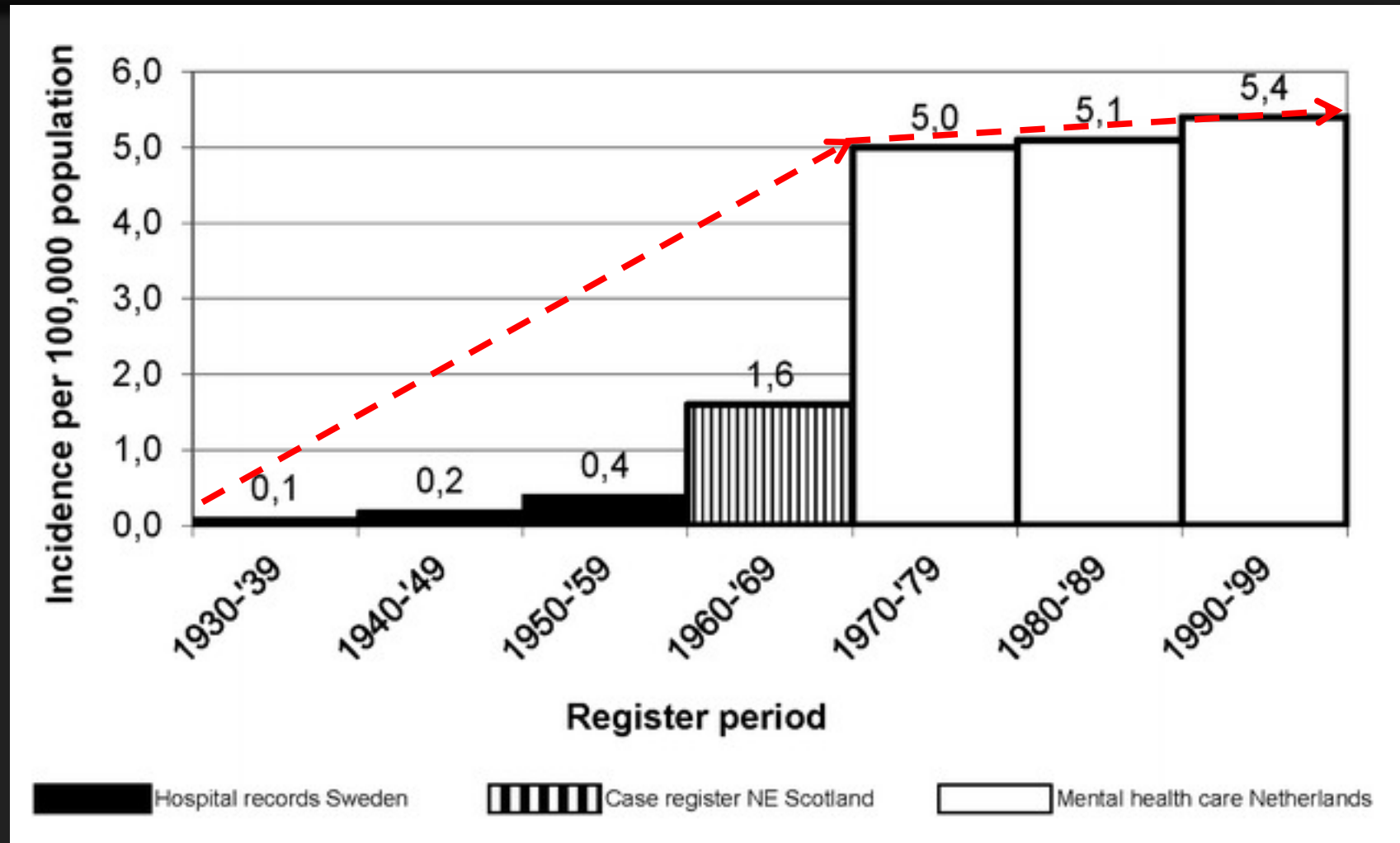
(Finucane MM, Stevens GA, Cowan MJ et al, *Lancet*, 2011)

■ Adult Men obese %   ■ Adult Women obese %



# Northern Europe • registered yearly incidence of AN

(Frédérique R Smink *et al*, *Current Psychiatry Reports*, 2012)



## eating disorders in Europe: incidence (2015-half 2016)

(Anna Keski-Rahkonen & Linda Mustelin, *Current Opinion in Psychiatry*, 2016)

Anorexia Nervosa

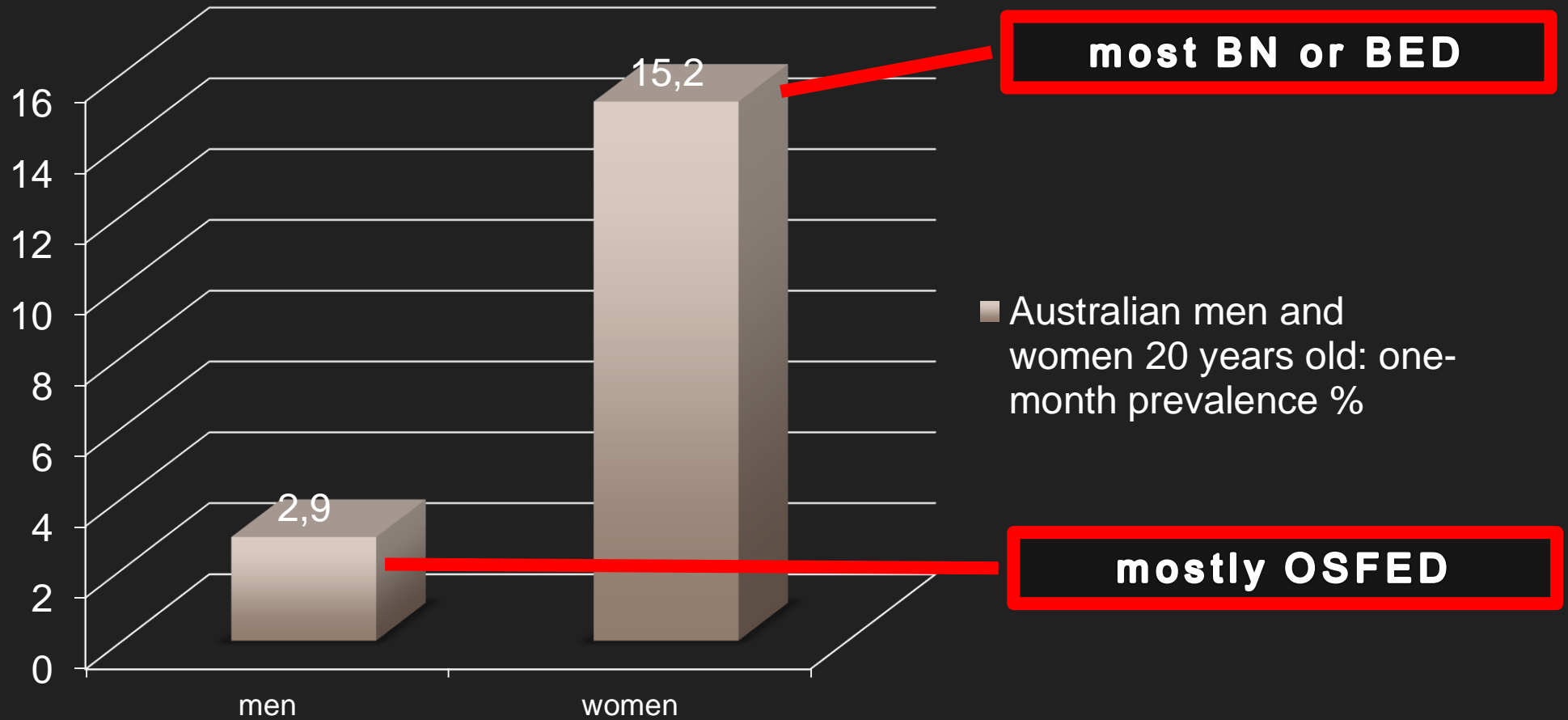
incidence stable

Bulimia Nervosa

incidence declining

# Australia • DSM-5 EDs: one-month prevalence

(Karina L Allen *et al*, 2013)



# EDs in Europe: psychiatric comorbidity (2015-half 2016)

(Anna Keski-Rahkonen & Linda Mustelin, *Current Opinion in Psychiatry*, 2016)

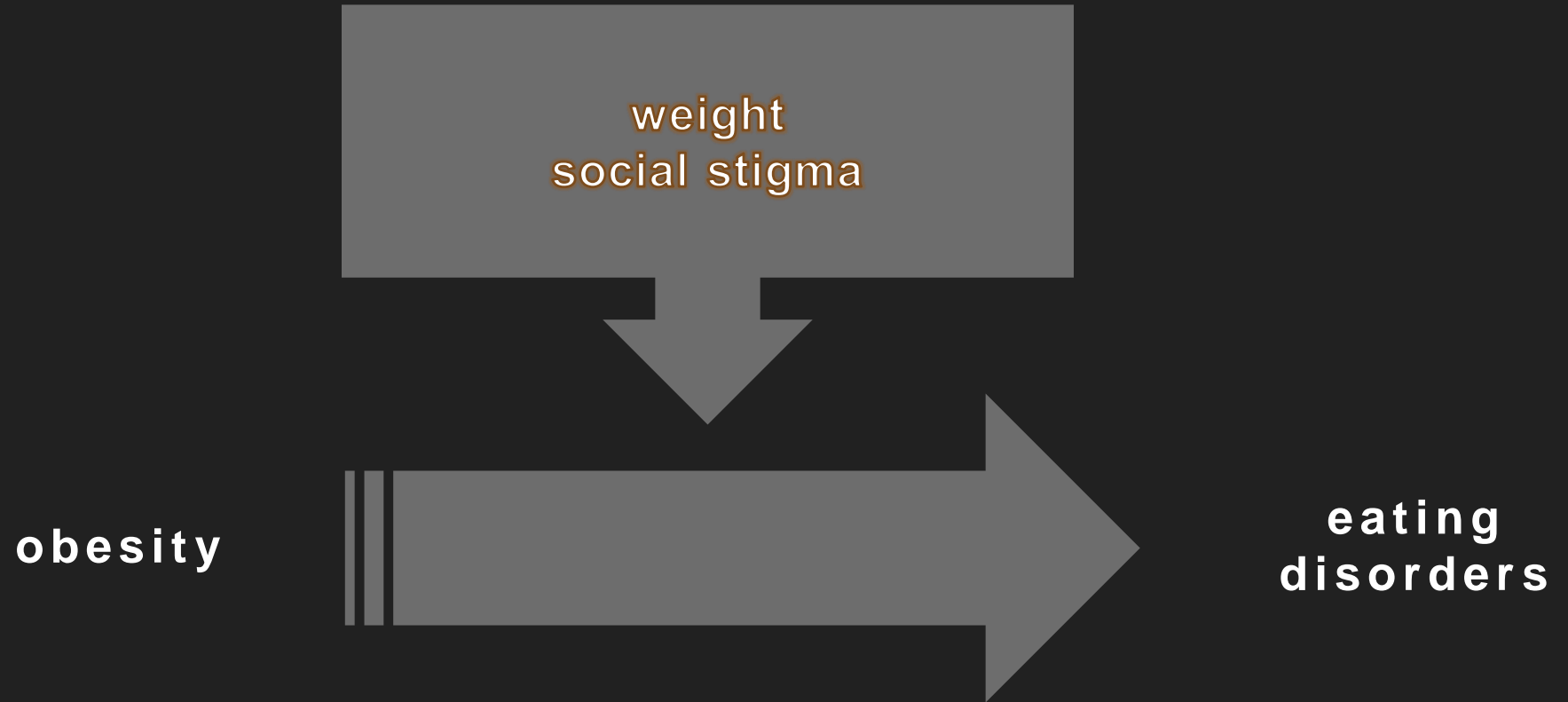
|                         |        |
|-------------------------|--------|
| anxiety disorders       | > 50 % |
| mood disorders          | > 40 % |
| self-harm               | > 20 % |
| substance use disorders | > 10 % |

## *main risk factors*

- parental psychiatric disorders
- prenatal maternal stress
- various family factors
- childhood overweight
- body dissatisfaction in adolescence



# obesity ... ED



A decorative graphic consisting of a thick red horizontal line that tapers to a point on the left side, set against a dark background.

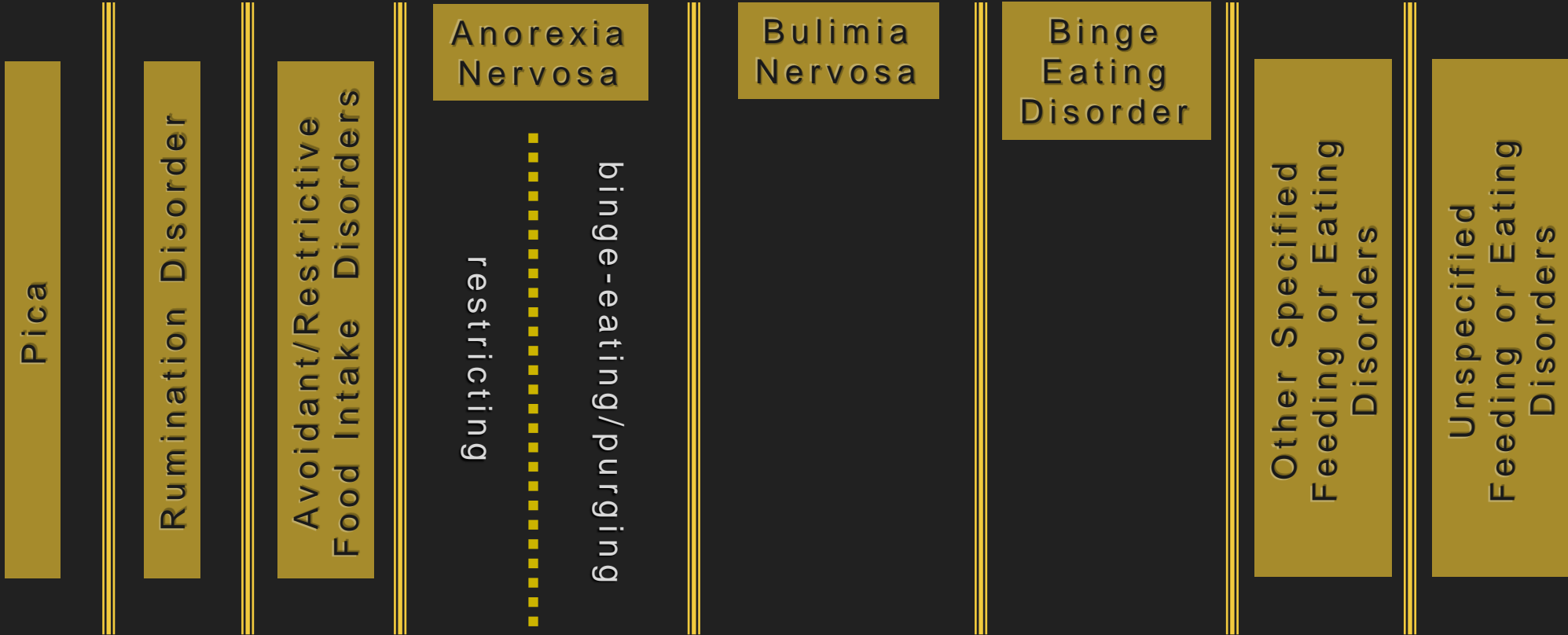
# i disturbi dell'alimentazione nel DSM-5





# DSM-5 feeding and eating disorders

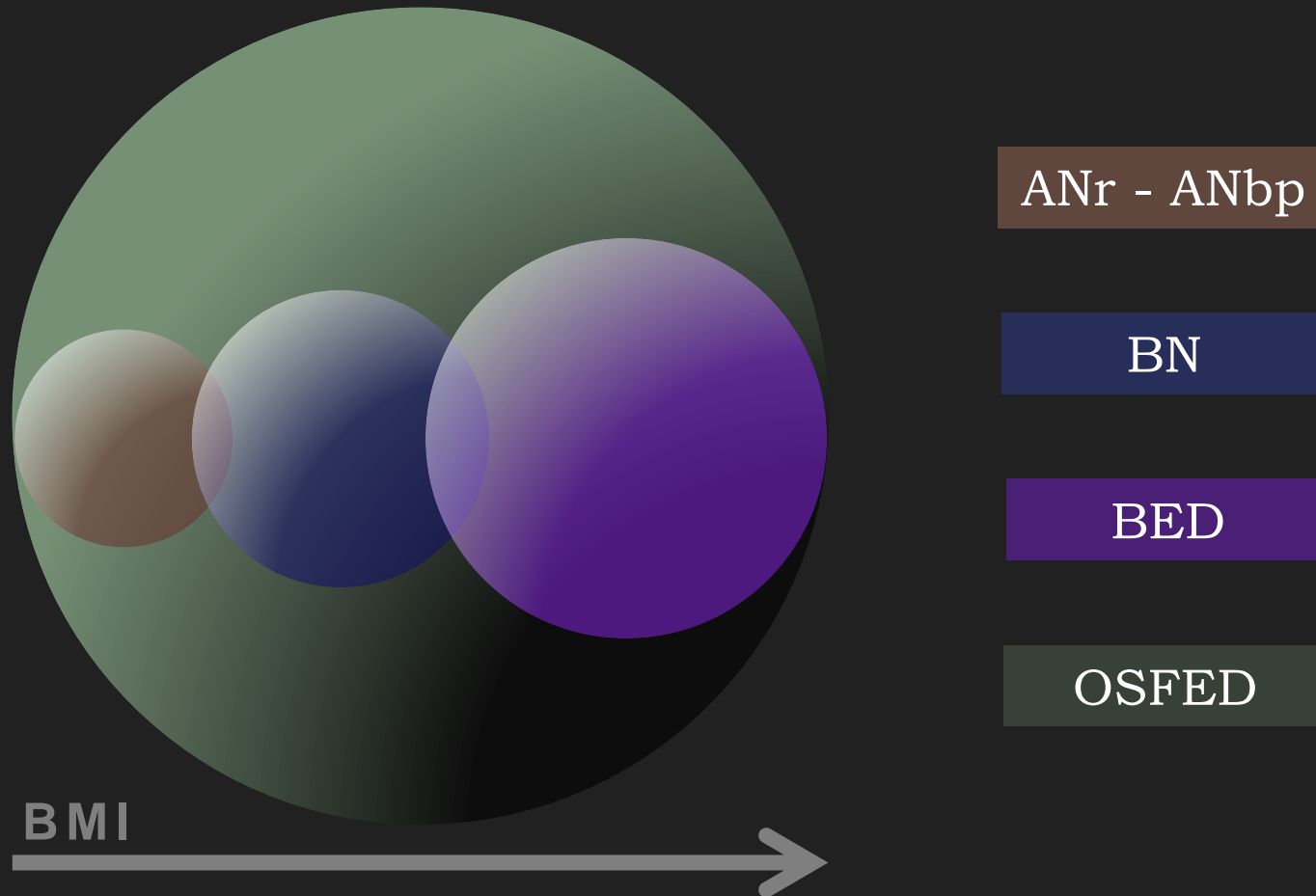
(American Psychiatric Association, 2013)





# DSM-5 • three major eating disorders

(American Psychiatric Association, 2013)





**atypical anorexia nervosa not underweight**

## atypical anorexia nervosa not underweight ✦ definition

(Whitelaw M *et al*, 2014; Sawyer SM *et al*, 2016)

Adolescents  
with atypical anorexia nervosa  
have lost significant weight  
but  
are not underweight



They are presenting to  
pediatric eating disorder services  
at an increasing rate

Atypical AN considerably affects  
physical and psychological functioning,  
despite adolescents presenting  
within or above  
the normal weight range



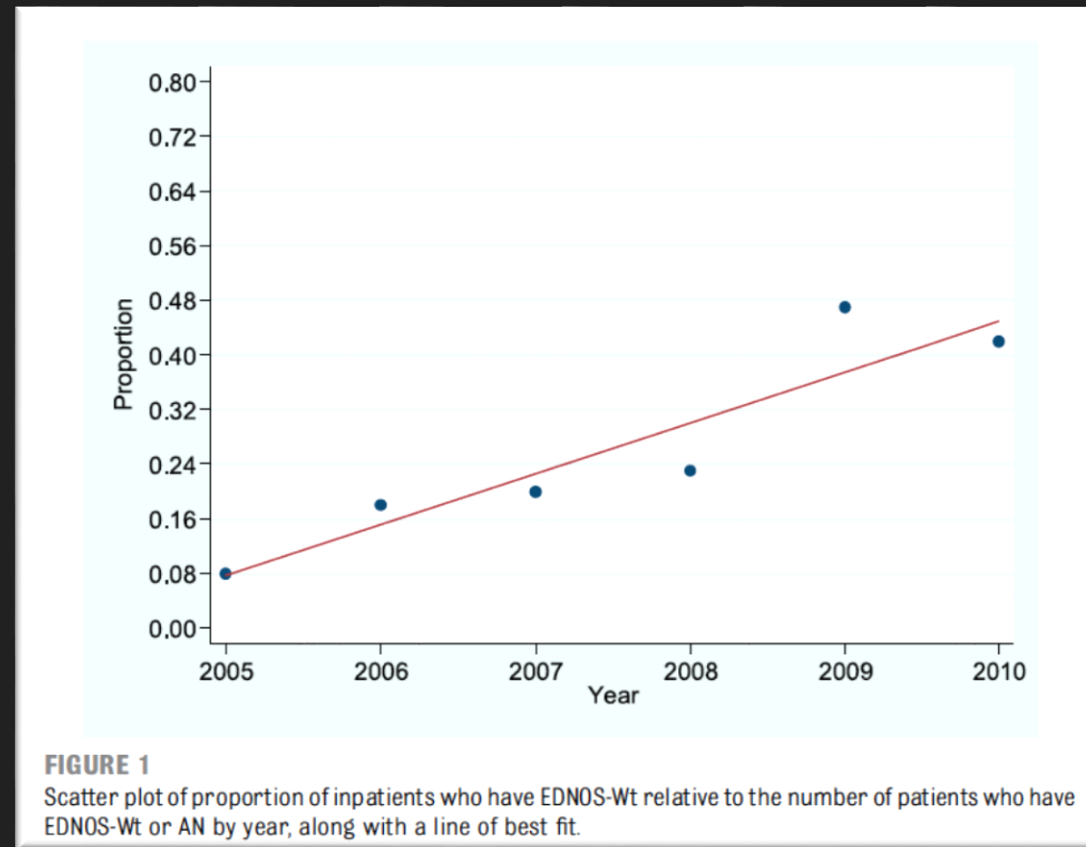
The morbidity  
of adolescents with atypical AN  
does not appear less severe  
than that  
of adolescents with full-threshold AN

# atypical AN not underweight vs. typical AN ✦

## increasing rate of inpatients

(Whitelaw M *et al*, 2014)

|             | 2005 | 2009 | 2010 |
|-------------|------|------|------|
| atypical AN |      |      |      |
| ————        | 8%   | 47%  | 43%  |
| typical AN  |      |      |      |



# atypical AN vs. typical AN ✦ physical features - a

(Sawyer SM *et al*, 2016)

|                                 | atypical AN | typical AN | p      |
|---------------------------------|-------------|------------|--------|
| age                             | 15.5        | 15.4       | ns     |
| female gender                   | 88%         | 88%        | ns     |
| current BMI                     | 21.4        | 16.0       | < .001 |
| currently overweight or obese   | 17%         | 0%         | < .001 |
| highest premorbid BMI           | 27.7        | 20.1       | < .001 |
| overweight or obese in the past | 71%         | 12%        | < .001 |
| loss of weight kg               | 17.6        | 11.0       | < .001 |
| age at menarche                 | 11.9        | 12.4       | .05    |
| amenorrhea                      | 32%         | 61%        | .003   |



# atypical AN vs. typical AN ✦ physical features - b

(Sawyer SM *et al*, 2016)

|  | atypical AN | typical AN | p    |
|--|-------------|------------|------|
| bradycardia<br>( $< 50$ bpm)                           | 24%         | 33%        | ns   |
| orthostatic instability<br>( $> 20$ bpm, $> 10$ mm Hg) | 43%         | 38%        | ns   |
| hypothermia<br>( $< 35.5^{\circ}\text{C}$ )            | 10%         | 13%        | ns   |
| admitted to hospital at<br>presentation                | 41%         | 52%        | ns   |
| age at menarche  | 11.9        | 12.4       | .05  |
| amenorrhea   | 32%         | 61%        | .003 |

# atypical AN vs. typical AN ✦ psychological features

(Sawyer SM *et al*, 2016)

|  | Atypical AN     |                  | AN              |                  | OR or Mean Difference | (95% CI)        | P   |
|--|-----------------|------------------|-----------------|------------------|-----------------------|-----------------|-----|
|  | M (SD) or n (%) | (95% CI)         | M (SD) or n (%) | (95% CI)         |                       |                 |     |
| Compulsive exercise                                      | 30 (73%)        | (56.1 to 85.3)   | 68 (59%)        | (44.8 to 63.8)   | 1.93                  | (0.88 to 4.21)  | .10 |
| Psychiatric comorbidity                                  | 16 (38%)        | (23.8 to 52.4)   | 53 (45%)        | (36.4 to 53.4)   | 0.76                  | (0.37 to 1.55)  | .44 |
| Psychotropic medication                                  | 4 (9%)          | (2.4 to 19.0)    | 14 (12%)        | (5.9 to 17.8)    | 0.78                  | (0.24 to 2.52)  | .68 |
| Self-harm/Suicidal ideation                              | 17 (43%)        | (27.5 to 57.5)   | 46 (39%)        | (30.8 to 47.9)   | 1.14                  | (0.55 to 2.36)  | .72 |
| Depressive symptoms (CDI)                                | 22.76 (12.17)   | (19.03 to 26.94) | 18.98 (11.92)   | (16.68 to 21.09) | 3.78                  | (-0.78 to 8.34) | .10 |
| Self-Esteem (RSE)  | 22.24 (7.69)    | (19.78 to 24.64) | 24.81 (7.36)    | (23.40 to 26.40) | -2.57                 | (-5.40 to 0.26) | .08 |
| Obsessive compulsiveness (CY-BOCS)                       | 6.14 (8.06)     | (3.69 to 8.69)   | 4.12 (7.35)     | (2.81 to 5.61)   | 2.03                  | (-0.88 to 4.94) | .18 |
| Eating/weight-related obsessive compulsiveness (YBC-EDS) | 15.74 (9.10)    | (12.57 to 18.80) | 13.63 (9.07)    | (11.84 to 15.49) | 2.11                  | (-1.40 to 5.62) | .24 |

## atypical AN vs. typical AN ✦ EDE

(Sawyer SM *et al*, 2016)

| Eating Disorder Examination | Atypical AN | Typical AN |
|-----------------------------|-------------|------------|
| Restraint                   | 3.48        | 2.72       |
| Eating concerns             | 2.55        | 1.78       |
| Shape concerns              | 3.91        | 2.50       |
| Weight concerns             | 3.55        | 2.16       |
| Global score                | 3.37        | 2.29       |
| Self-induced vomiting       | 22%         | 21%        |
| Laxative misuse             | 5%          | 3%         |
| Self-harm/suicidal ideation | 43%         | 39%        |

The weight adolescents with atypical AN are currently at is still higher than the weight they would secretly like to be.



Being overweight or obese before they developed the ED could fuel a "fear of fatness" and perpetuate the disorder itself.

# atypical anorexia nervosa: not underweight

(Sawyer SM *et al*, 2016)

Adolescents  
with atypical anorexia nervosa  
have lost significant weight  
but  
are not underweight



They are presenting to  
pediatric eating disorder services  
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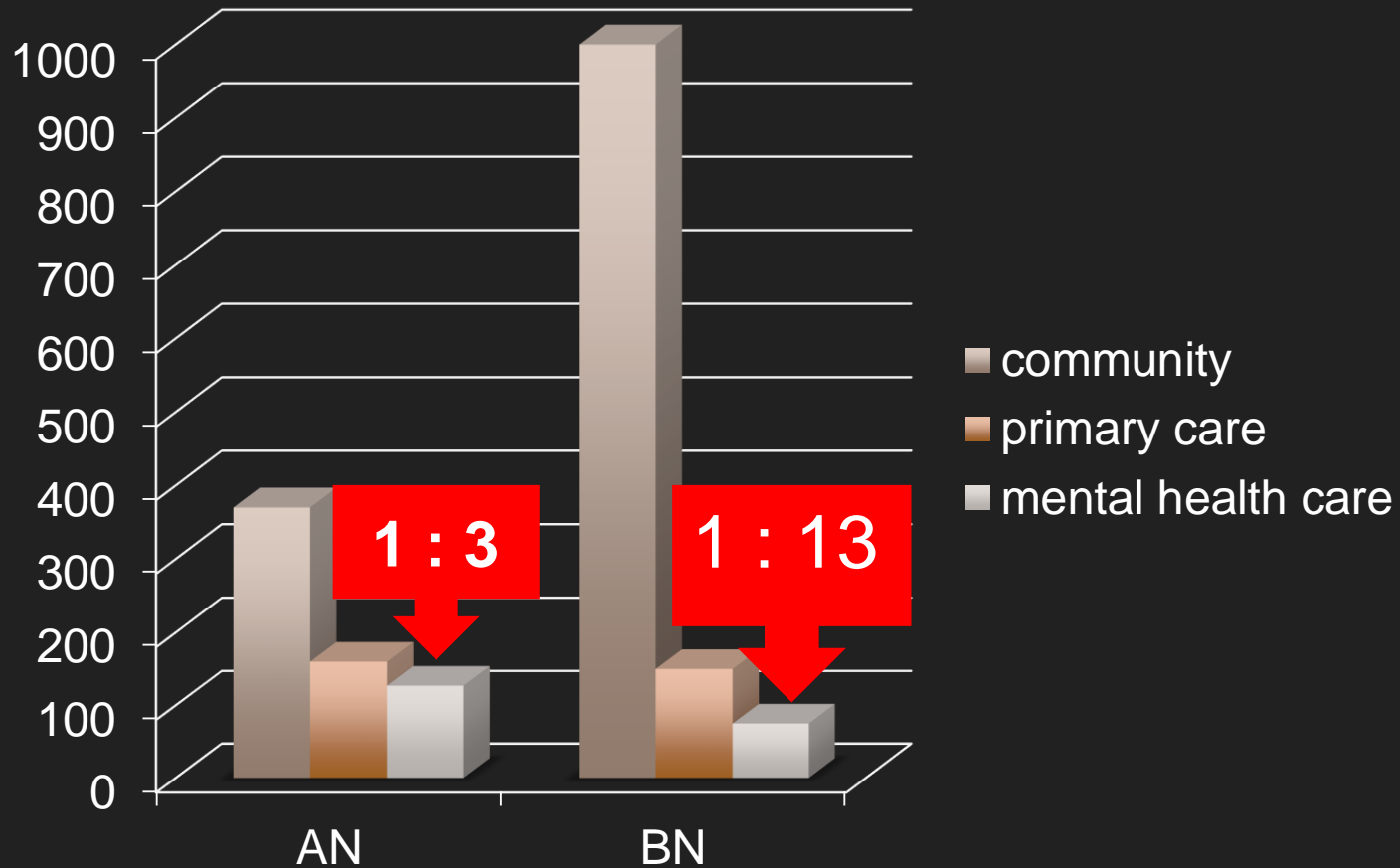
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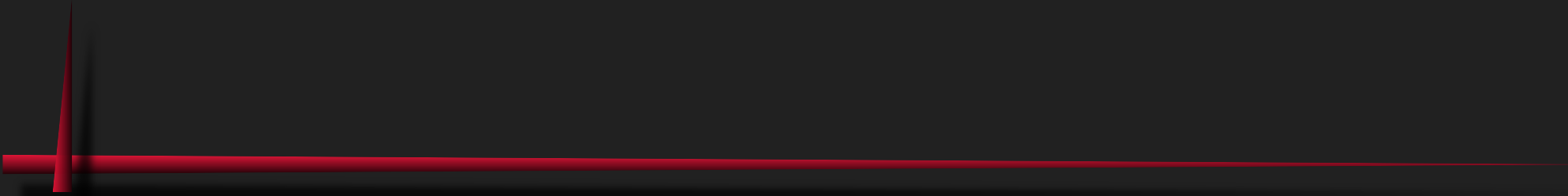


The morbidity  
of adolescents with atypical AN  
does not appear  
less severe than that  
of adolescents with full-threshold AN

# one-year prevalence rates at different levels of care

(Frédérique R Smink *et al*, *Current Psychiatry Reports*, 2012)





anorexia nervosa by proxy  
(Münchausen by proxy syndrome)



# anorexia nervosa by proxy

(Katz RL *et al*, 1985)

Katz RL, Mazer C, Litt IF

Anorexia nervosa by proxy.

*J Pediatr*

107 (2):247-248, 1985

# anorexia nervosa by proxy - a

(Honjo S, 1996)

Honjo S

A mother's complaints of overeating by her 25-month-old daughter: a proposal of anorexia nervosa by proxy.

*Int J Eat Disord*

20 (4):433-437, 1996

a case of a 25-month-old girl brought in by her mother with complaints of overeating.

The mother indicated the patient to have begun overeating before the age of 1 year.



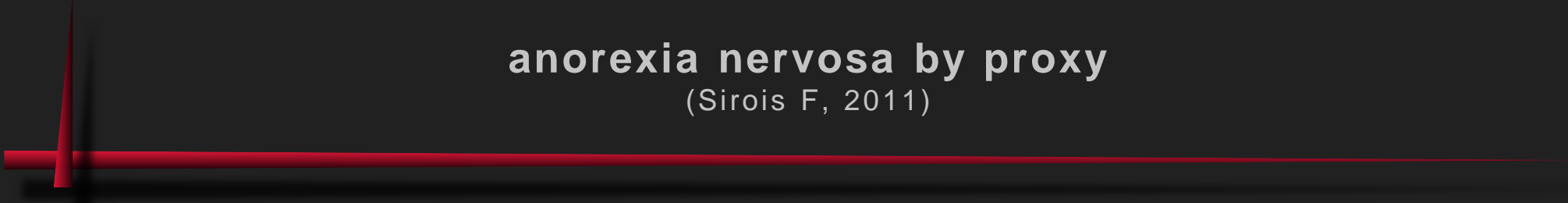
# anorexia nervosa by proxy - b

(Honjo S, 1996)

However,  
the patient was  
of

low height  
and  
low body weight,  
and appeared underfed

The issue was  
the mother placing  
severe restrictions  
on the child's diet,  
pathologically afraid  
of the child overeating.



# anorexia nervosa by proxy

(Sirois F, 2011)

Sirois F

Anorexie mentale par procuration : une présentation inhabituelle.

*La Presse Médicale*

40 (5): 547-550, 2011

# anorexia nervosa by proxy - c

(Honjo S, 1996)

The mother seemed to have been suffering from a disorder similar to anorexia nervosa, although not typical.

Her fear that her child might eat too much appeared as a projection of the fat phobia characteristic of anorexia nervosa on to her child, which would justify labeling the child's condition **anorexia nervosa by proxy**

# anorexia nervosa by proxy - a

(Russell G *et al*, 1998)

Russell GF, Treasure J,  
Eisler I

Mothers with anorexia  
nervosa who underfeed  
their children: their  
recognition and  
management.

*Psychol Med*  
28 (1):93-108, 1998

Women with anorexia nervosa  
have a reduced fertility  
but they may have borne children  
before the onset of their illness  
or after partial recovery.

Little is known on how to identify the  
anorexic mothers who underfeed their children  
and how to manage them.

## anorexia nervosa by proxy - b

(Russell G *et al*, 1998)

Eight such mothers were identified as a result of obtaining serial measurement of the children's weights and heights over time.

Nine children  
(eight boys and one girl)  
were found to have suffered food deprivation:

with

severe reduction in weight-for-age in six

and

in height-for-age in eight.

Five siblings were not affected.

# anorexia nervosa by proxy - c

(Russell G *et al*, 1998)

The mechanisms  
underlying  
the privation  
of the children  
stem  
from the mother's  
abnormal concerns  
with body size

**extending**  
**to her children.**

The children  
may become  
**unduly accepting**  
of the underfeeding.

# anorexia nervosa by proxy - d

(Russell G *et al*, 1998)

It is essential  
to obtain  
**the confidence**  
of mothers  
suspected of underfeeding  
their children  
and  
to adopt  
**a whole family approach**  
to treatment.

**Long-term treatment**  
of one mother,  
combining  
**family therapy**  
with  
**admissions to hospital,**  
resulted in  
catch-up growth in her two sons.



# **p u r g i n g   d i s o r d e r**





## DSM-5 Other specified feeding or eating disorders Purging Disorder (PurD)

### Purging Disorder (PurD)

In the final version of the DSM-5,  
PurD is not listed as a discrete diagnosis  
but named as part of  
**“other specified feeding or eating disorders”**  
and defined as

- recurrent purging behaviour to influence weight or shape
- in the absence of binge eating

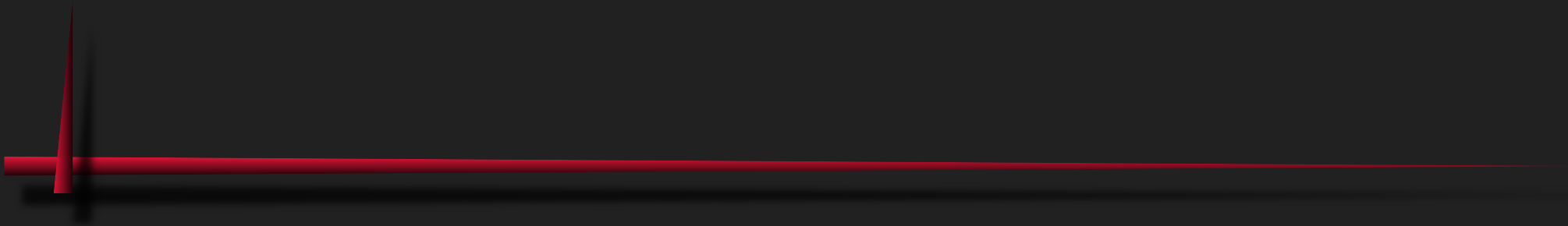
# mortality in purging disorder

(Koch S *et al*, EWD, 2013) • c

Limited to our sample  
the mortality of PurD  
seems to be

- lower than the mortality reported for AN
- nearly twofold higher than the mortality reported for BN and EDNOS.

In conclusion,  
our results suggest that  
patients with behaviours specified  
with the term PurD  
should be considered as  
individuals with  
serious disordered eating behaviour,  
who need  
attention and treatment.



# binge eating disorder



## DSM-5 Feeding and eating disorders

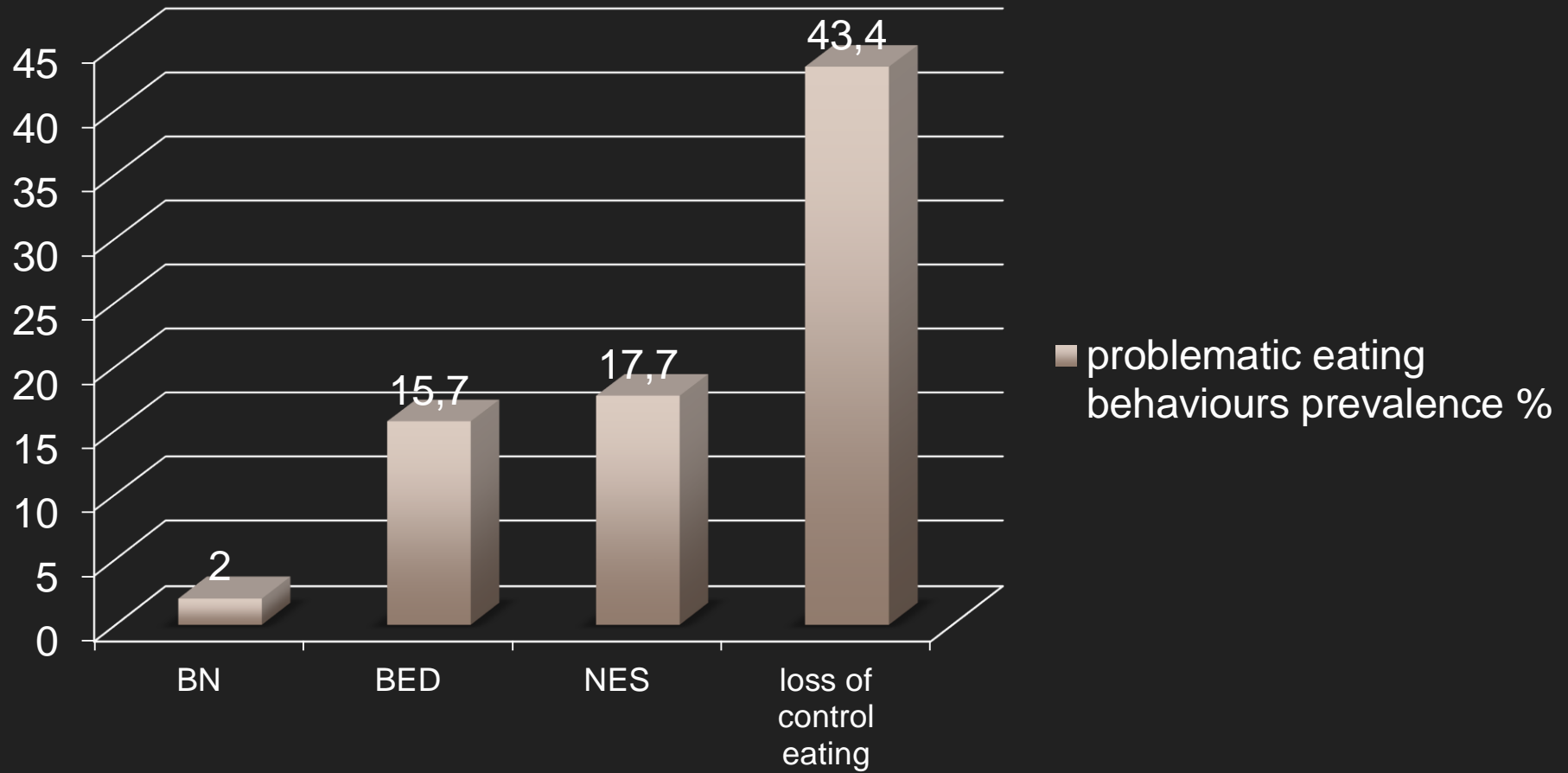
# Major changes: Binge Eating Disorder

The most impactful change was to add BED as a **distinct, formal disorder**

The diagnostic criteria note that episodes must occur, on average, at least **once a week over three months**

# ED prevalence before bariatric surgery

(James Mitchell *et al*, 2015)



# Eating pathology after bariatric surgery

## A review from January 1985 to May 2010

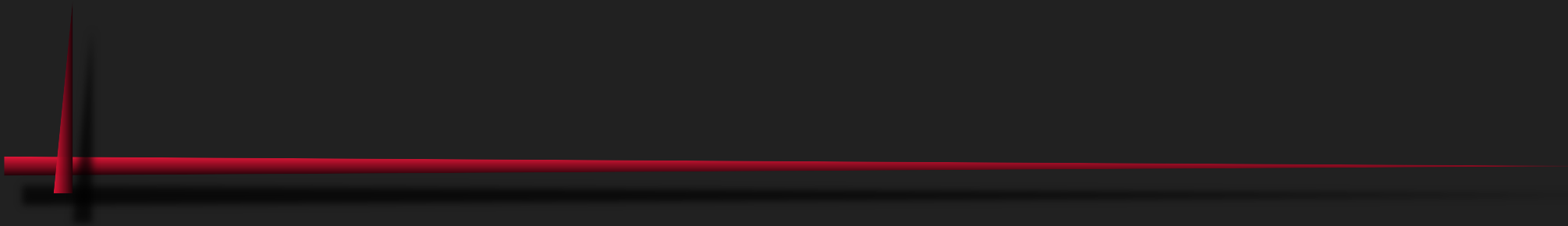
Marino JM et al.

The emergence of eating pathology after bariatric surgery: a rare outcome with important clinical implications.

*The International Journal Of Eating Disorders.*

2012;45(2):179-84.

- classical eating disorders: **a rare occurrence**
- eating problems: **far more common**
- it is highly likely that such problems are **underreported**
- **no typology** exists to classify such eating problems



# orthorexia nervosa

# orthorexia nervosa



## **orthorexia**

a preference for foods that one considers healthy.

## **orthorexia nervosa**

a medical condition in which the sufferer systematically avoids specific foods that they believe to be harmful.





# DSM-5 Feeding and eating disorders • definition

(American Psychiatric Association, 2013)

*Feeding and eating disorders are characterized by*  
*a persistent disturbance*  
*of eating or eating-related behavior*  
*that results in*  
*the altered consumption or absorption of food*  
*and that*

*significantly impairs*  
*physical health or psychosocial functioning*

# orthorexia nervosa by proxy - a

(Cuzzolaro M & Donini LM 2016)

Cuzzolaro M & Donini LM

Orthorexia nervosa by  
proxy?

*Eat Weight Disord*  
2016

DOI 10.1007/s40519-016-  
0310-8

In July 2016  
a 13-month-old child  
in danger of death  
was hospitalized in Milan  
against his parents' will.

## orthorexia nervosa by proxy - b

(Cuzzolaro M & Donini LM 2016)

Lab values  
were alarming  
and  
consistent with  
extreme undernutrition.

The physicians  
found that  
the infant's weight was 5.2 kg,  
the growth was below the 3rd percentile  
with  
serious hypotonia  
and  
psychomotor impairment.

# orthorexia nervosa by proxy - c

(Cuzzolaro M & Donini LM 2016)

An inflexible vegan diet  
imposed by the parents  
was reported as  
the main cause  
of the problem.

In the last few years  
newspapers reported

several stories  
similar to the previously examined case.

# orthorexia nervosa by proxy - d

(Cuzzolaro M & Donini LM 2016)

Veganism in adults  
requires  
a well balanced diet  
including  
supplements  
or  
fortified products.

As regards infants and toddlers  
uncontrolled vegan diets  
may be particularly dangerous.

Composition of breast milk from vegan women,  
appropriate breast milk substitutes,  
supplements  
(e.g., vitamin B-12, vitamin-D, iron, zinc, calcium)  
and type and amount of dietary fat  
should be evaluated on a regular basis



obesità e disturbi dell'alimentazione



differenze e intersezioni

# differenze



definizione

classificazione

complicanze  
mediche

trattamento



**... tuttavia ...**



## similarities in phenotype

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There are similarities in phenotype such as:

- excessive attempts at weight control
- binge eating behaviours
- food craving/addiction
- ...

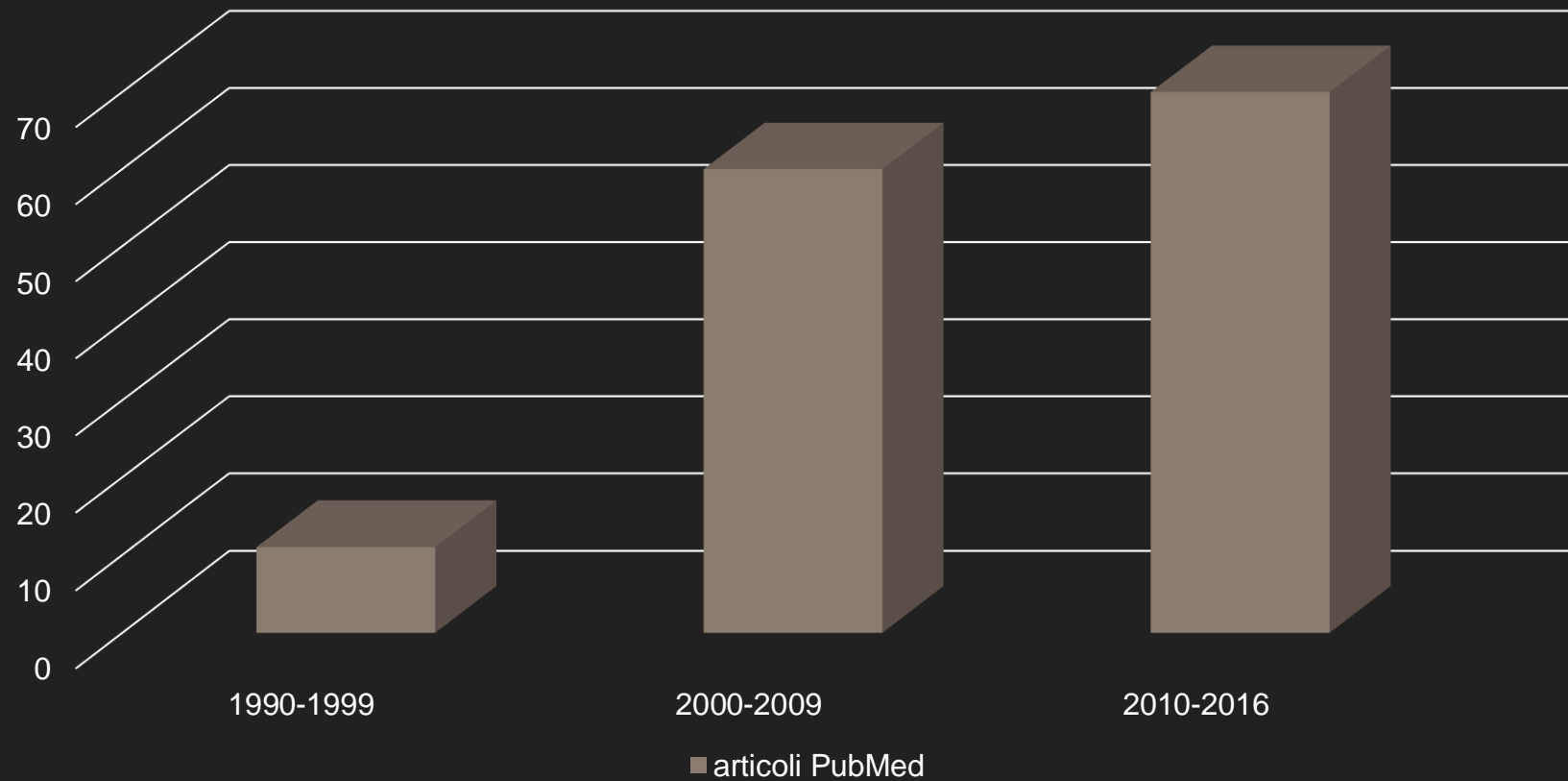
## similarities in risk factors

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There are similarities in risk factors such as:

- low self-esteem
- external locus of control
- childhood abuse and neglect
- dieting
- media exposure
- body image dissatisfaction
- weight-related teasing
- shared susceptibility genes

# Numero di articoli (PubMed) che contengono nel titolo, insieme, le parole Obesity e Eating Disorders



## literature on obesity & eating disorders

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Bruch, H. (1973). *Eating Disorders: Obesity, Anorexia Nervosa and the Person Within*. New York: Basic Books.

Williamson, D. (1990). *Assessment of Eating Disorders: Obesity, Anorexia and Bulimia Nervosa*. New York: Pergamon Press.

## literature on obesity & eating disorders

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Brownell, K., & Fairburn, C. (Eds.). (1995). *Eating Disorders and Obesity*. New York: Guilford.

Goldstein, D. (Ed.). (1999). *The Management of Eating Disorders and Obesity*. Totowa, NJ: Humana Press.

Fairburn, C., & Brownell, K. (Eds.). (2002). *Eating Disorders and Obesity. A Comprehensive Handbook (Second Edition ed.)*. New York: Guilford.

Goldstein, D. (Ed.). (2005). *The Management of Eating Disorders and Obesity*. 2nd edition. Totowa, NJ: Humana Press.

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Thompson, J. K. (Ed.). (1996). *Body Image, Eating Disorders and Obesity. An Integrative Guide for Assessment and Treatment*. Washington D.C.: American Psychological Association.

Thompson, J., & Smolak, L. (Eds.). (2001). *Body image, eating disorders and obesity in youth. Assessment, prevention and treatment*. Washington, DC: American Psychological Association.

Fairburn, C., & Brownell, K. (Eds.). (2002). *Eating Disorders and Obesity. A Comprehensive Handbook (Second Edition ed.)*. New York: Guilford.

Latner, J., & Wilson, G. (Eds.). (2007). *Self-help approaches for obesity and eating disorders: Research and practice*. New York: Guilford.

# Excessive Appetites

## A Psychological View of Addictions

(Jim Orford, 1985 & 2001)

*alcohol and other drug abuse*

*eating disorders and obesity*

*compulsive exercise*

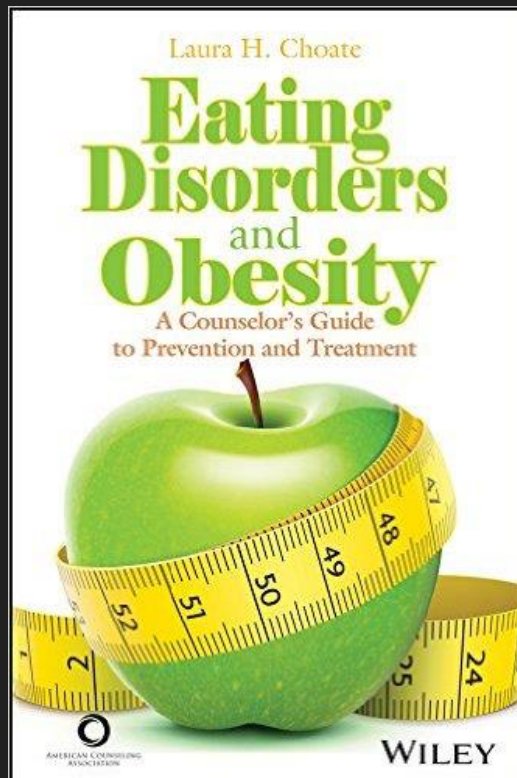
*pathological gambling*

*sex addiction*

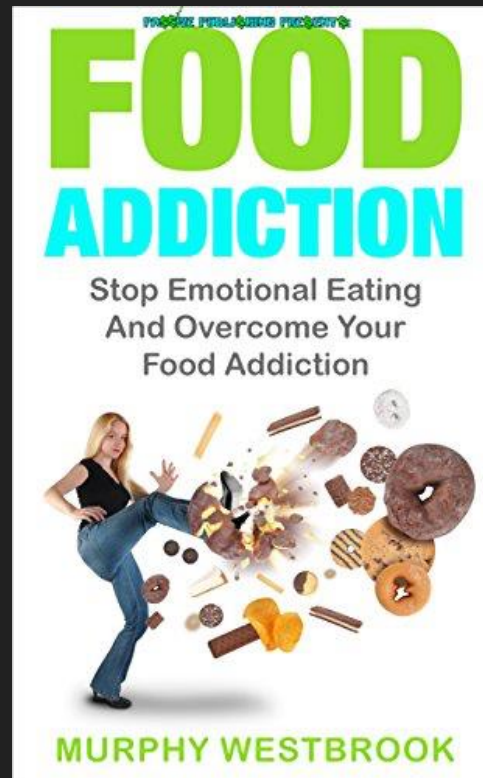
*compulsive shopping*

*... other compulsions*

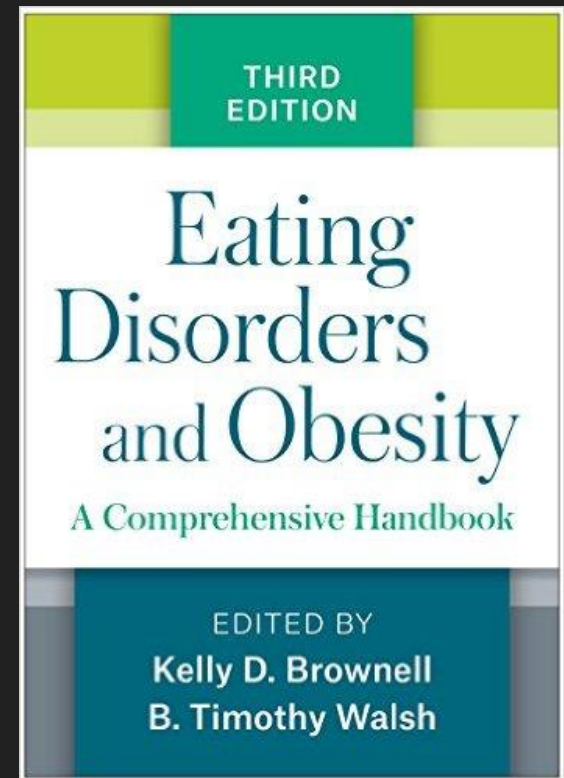
2013



2016

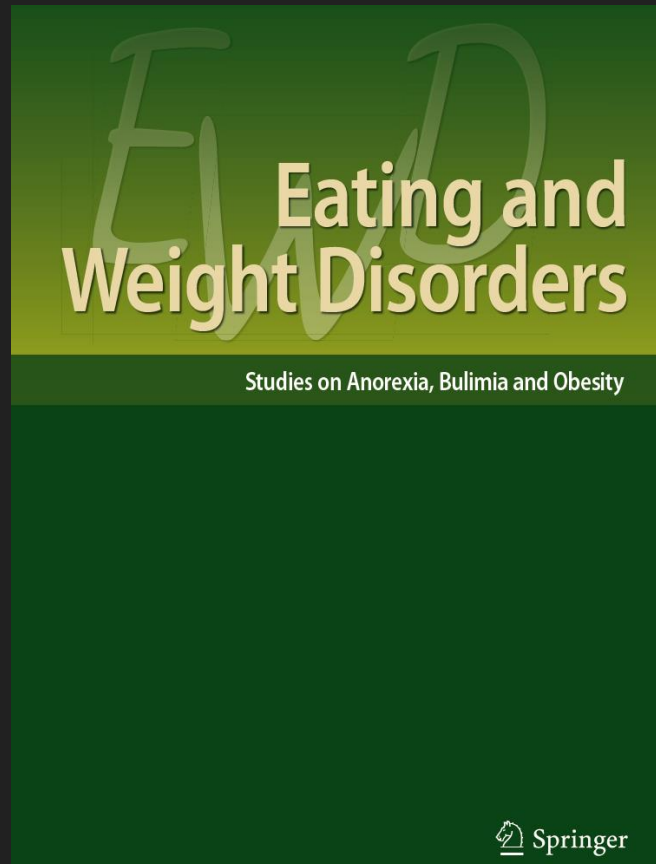


Feb 2017





# eating and weight disorders (from 1996)



# two sides of the same coin?

(Day J et al, 2009)

We believe that

this polarisation  
is fundamentally flawed,

and research and treatment of both types of disorder  
would be better served by greater appreciation of:

- the psychosocial components of obesity
- the biological and genetic components of eating disorders.

**The interface between the eating disorders and obesity fields:  
moving toward a model of shared knowledge and collaboration.**  
(Neumark-Sztainer D, 2009)

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The ... recommended model,  
is one in which  
the two fields  
share knowledge  
to enhance the difficult work  
of preventing and treating  
both eating disorders and obesity.

## associazioni e/o migrazioni transdiagnostiche



A broad spectrum of ...

**Weight-related Disorders**

or

**Non-homeostatic Eating  
Disorders**

