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Romanian Prader-Willi Association

ASOCIACIÓN MADRILEÑA  
PARA EL SÍNDROME DE  
PRADER-WILLI



## CROSS-CULTURAL COMPARISONS OF OBESITY AND SPONTANEOUS GROWTH IN FRANCE, GERMANY, USA, AND UK

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**INTRODUCTION:** Prader-Willi syndrome (PWS) is a complex disorder with phenotypic variability. Obesity, however, is a universal feature of the syndrome. Certain variations between countries have been reported regarding the evolution of height and weight in PWS which have been attributed by some authors to cultural differences in the host populations, and by others to clinical management resulting from early diagnosis. We present here the first standardized growth curves for French children with the syndrome up to the age of 20 years and we compare the evolution of obesity in this French population against children with the syndrome living in the USA, the UK and Germany.

**METHODS:** A nationwide French cohort study using a combined cross-sectional longitudinal design of 158 children and adults with PWS excluding data post GHT (growth hormone therapy). Data from health records were collected for weight and height for each individual at 6 months, 12 months, 18 months, 2 years, 5 years, 10 years, 15 years, 20 years and currently.

**RESULTS:** A significantly higher rate of adult obesity is found in the French male Prader-Willi population compared to the USA ( $\chi^2 = 4.06$ ,  $P = 0.04$ ) and the UK ( $\chi^2 = 3.83$ ,  $P = 0.05$ ). Similar trends are observed for females but these fail to reach significance. This is in contrast to non PWS population trends in France, and is not apparent in the French children with PWS, who are lighter and taller than their American counterparts. Compared to the German population of children with PWS, weight evolution is similar for French and German boys with PWS up to the age of 15 years, but French males with PWS are heavier than German males with PWS at 20 years. Height, on the other hand, is similar. For females, French girls are lighter than German girls, but height is similar. The progression of obesity in French children with PWS who are currently under 15 years is slower than those currently 15 years and over. Age of diagnosis is significantly positively correlated with body mass index at 2, 5 and 10 years ( $r = 0.33$ ,  $P = < 0.001$ ;  $r = 0.28$ ,  $P = 0.003$ ;  $r = 0.3$ ,  $P = 0.01$  respectively). No genetic subtype differences for obesity were found between mUPD and DEL.

**DISCUSSION:** Generational differences in levels of obesity and the positive correlation between age of diagnosis and BMI suggest that early diagnosis has a significant impact on obesity management in PWS, regardless of growth hormone therapy, as suggested by Vogels (2004). This is particularly important in view of the fact that at the present time there is no medical treatment for obesity in Prader-Willi syndrome. This may also suggest potential benefit of early (preschool) dietary intervention programmes to tackle the obesity epidemic in the non PWS population.

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