Table 5. Summary of studies analyzing the potencial interactions between *FTO* gene variants and physical activity in Caucasian adults and children. Modified and updated from Rendo *et al*. (2009) [57]

***FTO*: rs9939609 variant**		
Subjects	**Main Effect**	**Reference**
Children		
Adolescents participating in the HELENA study (n = 752).	The effect of FTO variant on BMI, body fat and waist circumference was attenuated in subjects who met the daily recommended PA.	Ruiz et al., (2010)[73]
Healthy children participants of the STRIP study and randomly assigned to lifestyle intervention or control groups (n=349).	Leisure-time-PA was not associated with the variant.	Hakanen et al., (2009) [54]
Adults		
Finnish (n=2511) and Swedish (n=15925) non-diabetic middle-aged adults	No interaction between the *FTO* variant and physical activity on BMI was found.	Jonsson et al., (2009) [76]
Obese individuals from eight clinical centres in seven European countries (n=743).	The association between this variant and obesity may not be mediated by modulation of energy expenditure in obese individuals.	Goosens et al., (2009) [70]
Danish obese men (n=234) and controls (n=323).	The association between FTO variant and body fat was not mediated by an effect of the variant on resting energy expenditure or leisure time-PA.	Berentzen et al., (2008) [75]
Danish individuals from the population-based Inter99 study sample (n=5722).	In homozygous carriers of the A-allele, physical inactivity associates with a higher increase in BMI compared to non carriers and heterozygous for the A-allele.	Andreasen et al., (2008) [74]

Other *FTO* variants		
Adults		
Women from the DREW study (n= 234)	A allele of **rs8050136** was associated with BMI at baseline. An increased PA lead to a higher weight loss in AA subjects compared to CC subjects.	Mitchell et al, (2009) [77]
Participants from the EPIC-Norfolk Study. 20374 participants at baseline and 11909 participants during follow-up.	T risk allele of **rs1121980** was significantly associated with BMI and WC. PA level attenuated this effect on BMI and WC.	Vimaleswaran et al., (2009) [78]
Healthy Old Order Amish adults, selected from the HAPI study (n=704).	**26 *FTO* SNPs** were associated with BMI. The increased risk of obesity due to *FTO* variants can be blunted through PA. The association is much smaller and no significant in subjects having higher physical activity levels.	Rampersaud et al., (2008) [79]

FTO: fat mass and obesity associated gene
BMI: Body Mass Index
PA: Physical Activity