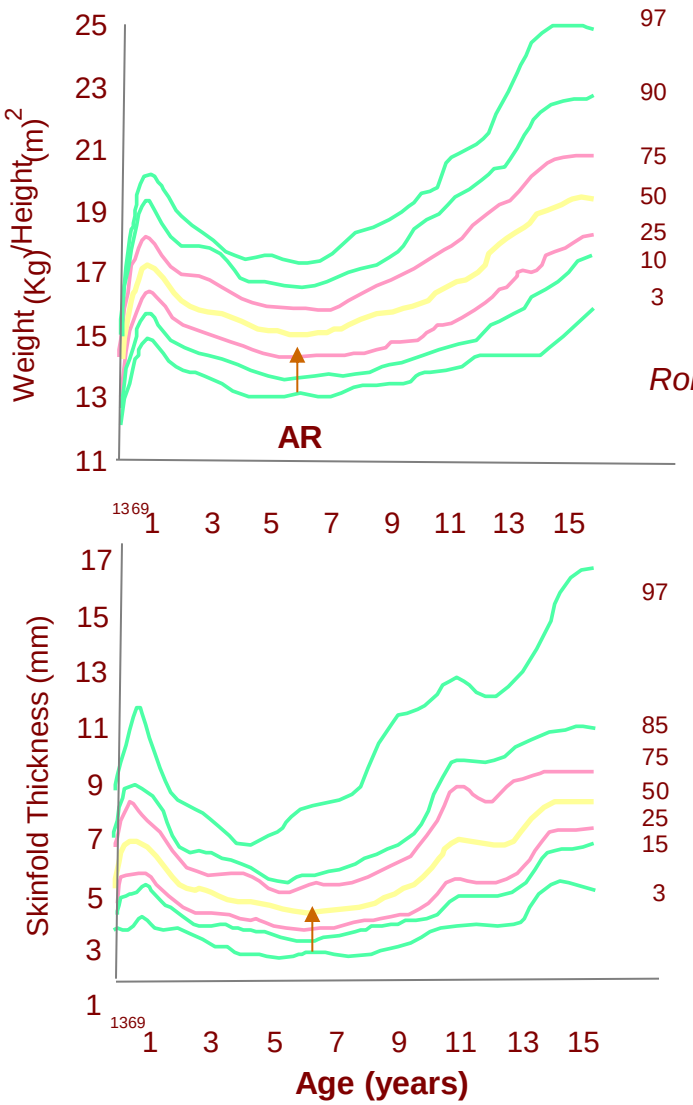
Adiposity development (BMI and Skinfolds)

BMI pattern is similar with the pattern of skinfold thickness

The nadir of the curve is named the « Adiposity rebound » (AR)

$BMI_{(kg/m^2)}$ = Weight/Height²

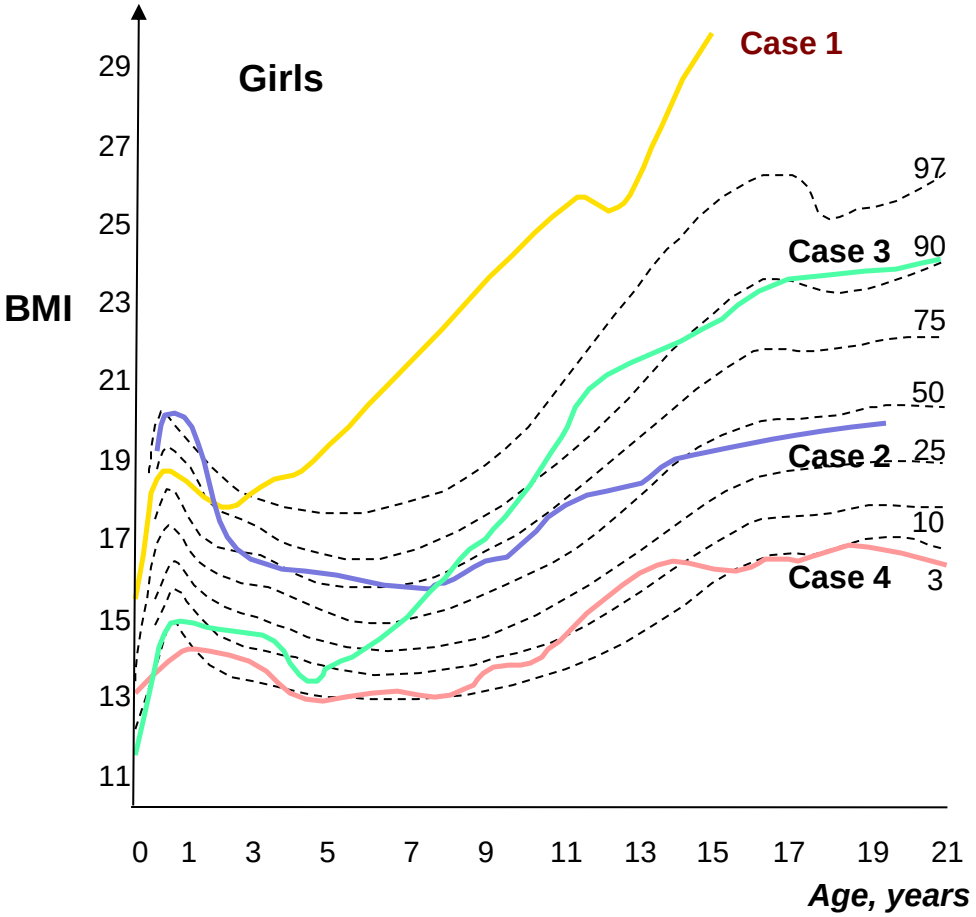


Rolland-Cachera et al.,AJCN 1982

Subscapular skinfold (mm)

(Sempé et al., 1979)

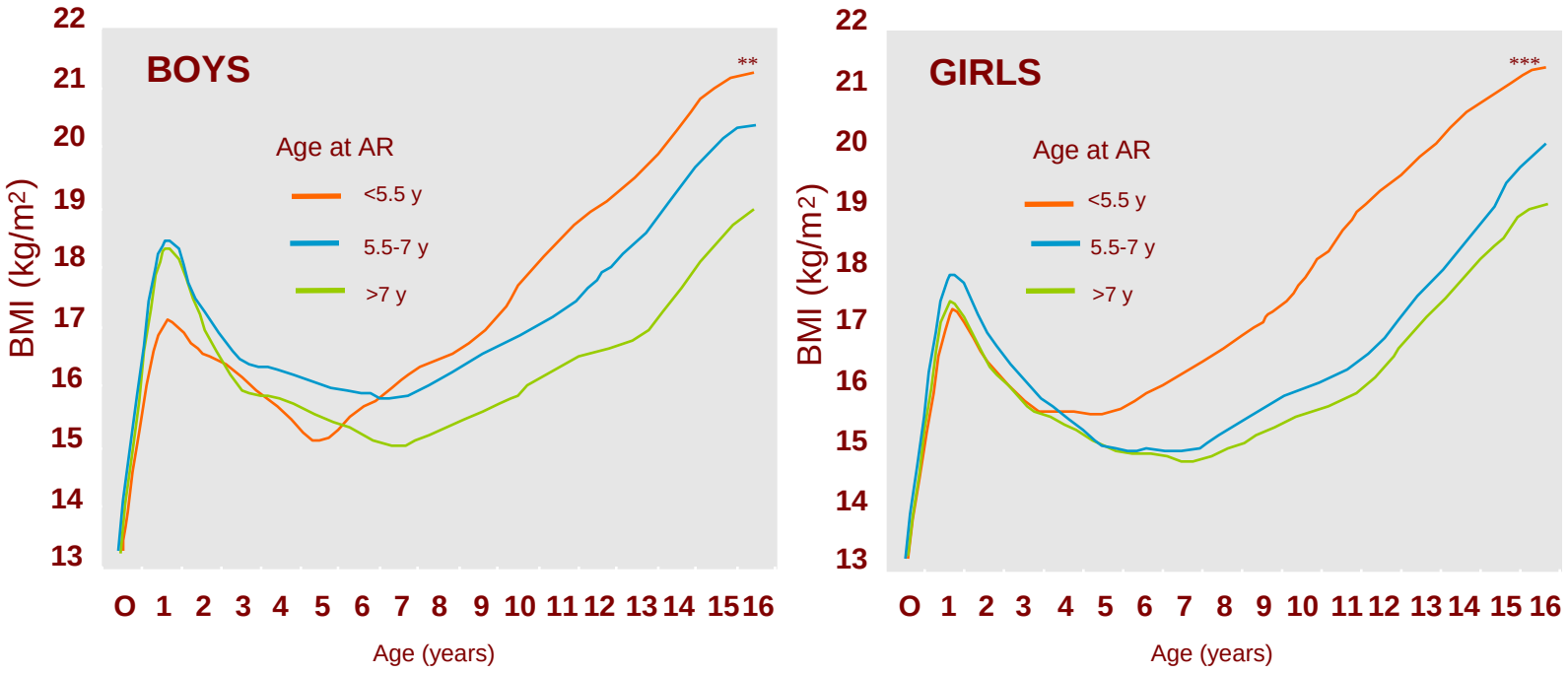
Four examples of individual BMI development and age at Adiposity Rebound (AR)



A fat child can stay fat after an early AR (n° 1), but join average after a late rebound (n°2)
A thin child stay thin after a late AR (n°4) or become fatter after an early rebound (n° 3)
(after Rolland-Cachera et al., ***Ann Hum Biol*** 1987)

BMI DEVELOPMENT ACCORDING TO AGE AT ADIPOSITY REBOUND

An early AR is associated with higher fatness development, but with previous lower values



(Rolland-Cachera et al. Am J Clin Nutr, 1984)

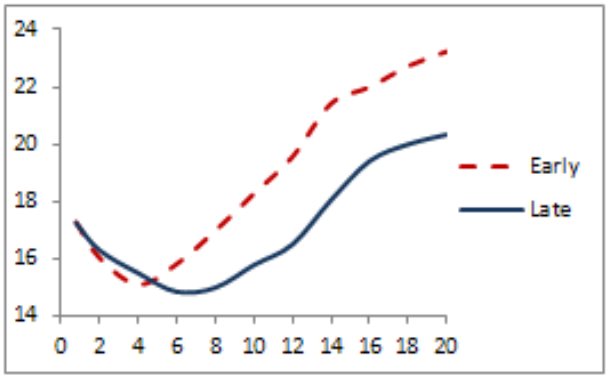
(**p<0.01; ** p<0.001)

BMI, Fat and Muscle areas development according to age at adiposity rebound (AR): Early vs Late AR

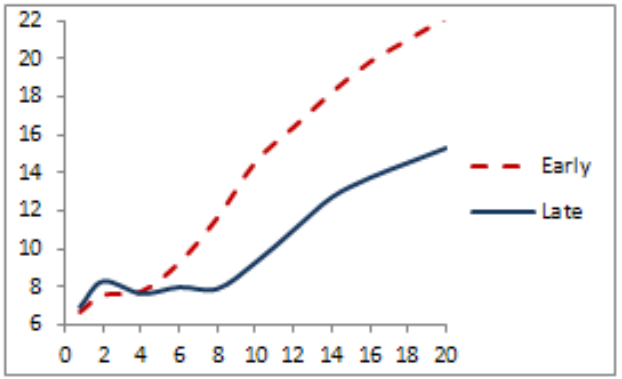
(Data from the French ELANCE study)

An early AR is associated with lower previous and higher subsequent BMI levels. Increased BMI after the AR mainly reflects increased fatness

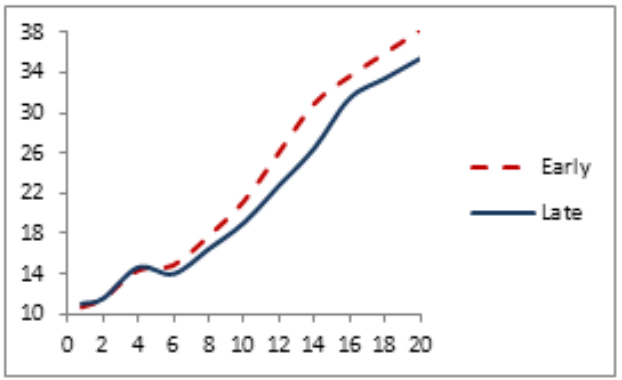
(Rolland-Cachera, Akrout & Péneau, ECOG e-book, 2014)



Body Mass Index BMI (kg/m²) according to age at AR



Arm fat area estimate UFE (cm²) according to age at AR



Arm muscle area estimate UME (cm²) according to age at AR