Network Coordinated Primary Care Intervention in obese children and adolescents: almost a decade of experience.

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Background

Significant increase of overweight or obesity (ow/ob) prevalence in children the last decade.

Consensus for multidisciplinary of care, most often evaluated for inpatient.

Since 2001, French health authorities have developed a national program to organize outpatient care networks for the prevention and management of obesity in children and adolescents (REPOP, *Réseau de Prévention et Prise en Charge de l'Obésité Pédiatrique*).

Created in 2003, **REPOP Ile de France** has more than 250 primary care physicians, dietitians, nurses, educators and psychologists trained in the management of childhood obesity and working in close collaboration with expert hospital staff.

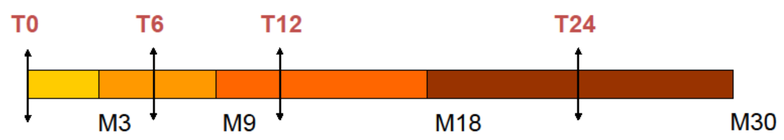
Ow/ob children and adolescents and their families, referred to the network, agree to follow a minimal 2 years standard care pathway.

This **patient-centered health care** is coordinated by a referring physician. It combines close consultations, participation in group or individual support.

Objective To describe the evolution of body mass index (BMI) in children and adolescents followed by REPOP Ile-de-France
To determine factors associated with the evolution of body size.

Methods

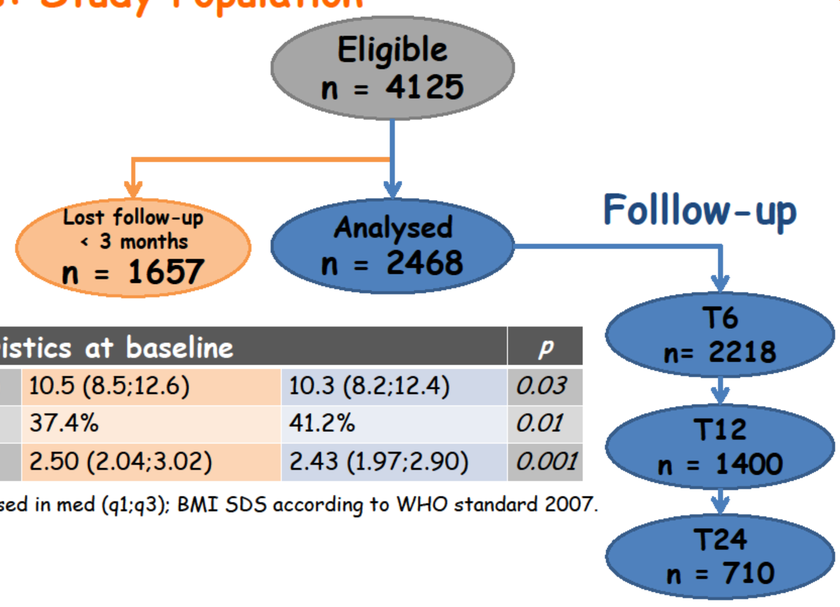
Eligible subjects were those included in REPOP Ile de France from 09/2003 to 12/2012. Analysis population had at least one follow-up visit after 3 months. Three analysis time points have been defined (T6, T12, T24) :



Primary endpoint: evolution of **BMI z-score.**
Improvement defined as **a decrease ≥ 10%** from baseline, regardless of subsequent follow-up.

Cox models used to analyze the influence of clinical and familial characteristics.

Results: Study Population

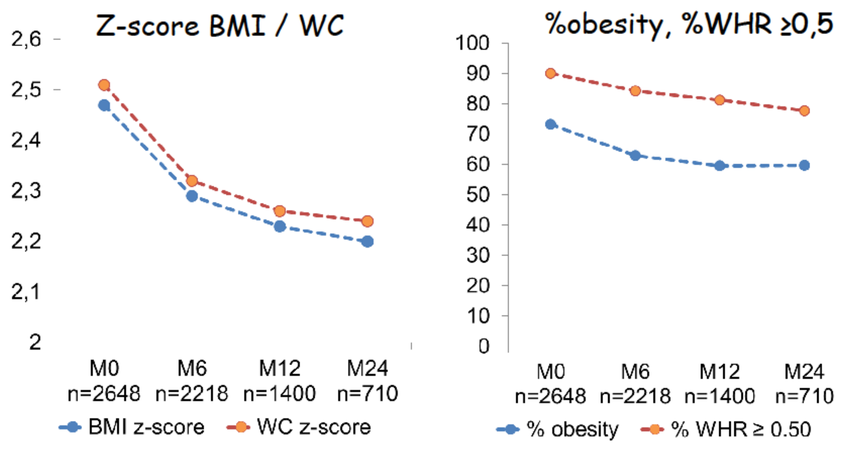


Characteristics at baseline			p
Age (years)	10.5 (8.5;12.6)	10.3 (8.2;12.4)	*0.03*
Sexe (M)	37.4%	41.2%	*0.01*
BMI (SDS)	2.50 (2.04;3.02)	2.43 (1.97;2.90)	*0.001*

Results expressed in med (q1;q3); BMI SDS according to WHO standard 2007.

Results: Follow-up

1. Evolution during follow-up



Body Mass Index (BMI); Waist Circumference (WC); Waist to Hip Ratio (WHR)

2. At the last visit

(median duration 11 (5.7;19;5) mths)

Change in z-score
BMI z-score : -0.18 (-0.40;-0.01)
WC z-score : -0.16 (-0.40;+0.05)

M0 vs last time of follow-up
obesity 73.3% vs 62.1%, *p<0,001*
WHR ≥ 0,50 90% vs 81.4%, *p<0,001*

Improvement in 1002 patients **(40.6%)**

Results: Factors involved in improvement (≥ 10% decrease of BMI z-score)

Improvement in 50% of patients at 9 months of follow-up.

Factors associated with improvement : intial lower BMI z-score and lower maternal BMI. Social factors (like fathers' job or area of residence) not associated with improvement.

	Modalities	Univariate HR [Wald $IC_{95\%}$]		Multivariable HR [Wald $IC_{95\%}$]	
Age at baseline	HR / 2 ans	0.97 [0.93 ; 1.01]	*p=0.11*		
Sexe	Male Female	1 1.01 [0.90 ; 1.13]	- *0.03*		
Ow/Ob	Overweight Obesity	1 0.78 [0.69 ; 0.89]	- *P<.0001*		
BMI z-score	HR / 0.50 DS	0.94 [0.91 ; 0.97]	***p<.0001***	0.96 [0.93 ; 0.99]	***p=0.01***
Maternal BMI	HR / 1 kg/m^2	0.95 [0.93 ; 0.97]	***p<.0001***	0.96 [0.94 ; 0.99]	***p=0.001***
Parental obesity	No Yes	1 0.86 [0.76 ; 0.97]	- ***p=0.01***		
Paternal Socio-Professional Category (n=1758)	Higher Intermediate Unemployed or retired	1 0.85 [0.73 ; 0.98] 1.03 [0.78 ; 1.34]	- ***p=0.03*** *p=0.85*		

Conclusion

Network coordinated primary care intervention is associated with clinical improvement of BMI and waist circumference in obese children and adolescents.

These results suggest that early identification and referral is associated with improved outcome. They will contribute to the improvement of the program by identifying the population at risk of lost of follow-up.

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