



# Obesity in patients with CKD 2-5, Kidney Tx and on Dialysis


## Recommendations from the Pediatric Renal Nutrition Taskforce



**Obesity & Metabolic Syndrome (O&MS)**   
**Prevalence:** 15-30% CKD > 3.8-9.8% children

 Lack of guidelines to prevent and manage obesity and MS in CKD 




 **Literature search (1980 -2020)**  
**PICO: Population, Intervention, Comparator, Outcome**


**P** 2-18 years, CKD2-5, Dialysis, KT

**I**



**C** Age- & Sex- matched children, adults with CKD, no comparator

**O**

 **Delphi Survey**  
50 Participants


 Graded using the American Academy of Paediatrics grading matrix

### Diagnostic Criteria





 2-5 yrs	 >5 yrs	<b>Overweight</b>
Weight-for- Height for age > +2SD	BMI > +1SD 19 yrs= BMI >25	
Weight-for-Height for age > +3SD	BMI > +2SD 19yrs-BMI > 30	<b>Obesity</b>

(WHO growth reference chart or a country-specific growth chart)

### METABOLIC SYNDROME

in children aged 2–18 years 

**Overweight (or obesity) + 2 of 4 additional CV risk factors**


-  SBP/ or DBP(BP) ≥ 90th centile for age, sex and height or ≥ 130/80 mmHg, whichever is lower, or on anti-hypertensive medication
-  Fasting triglycerides ≥ 100 mg/dL (1.1 mmol/L) if age < 10 years, or ≥ 130 mg/dL (1.5 mmol/L) if age ≥ 10 years
-  Fasting high-density lipoprotein (HDL) < 40 mg/dL (1.03 mmol/L)
-  Fasting serum glucose ≥ 100 mg/dL (5.6 mmol/L) or known type 2 diabetes mellitus (T2DM)

## MANAGEMENT

### Comprehensive Multicomponent Intervention

**Goal: improve components of the MS**

#### INDIVIDUALIZED ENERGY INTAKE




**Diet quality**  
Fruits & vegetables, whole grains, low- or non-fat dairy, pulses, fish & lean meat

**No**  
sugary beverages, processed foods, foods rich in saturated fat


**Tube fed**  
Review & adjust calories in the formula to avoid development of under/overweight

#### DAILY PHYSICAL ACTIVITY



with intensity and duration **individualized** according to age, physical tolerance, CKD stage, & comorbidities


#### BEHAVIOURAL MODIFICATIONS



regular & adequate sleep, reduction of screen time & managing psychosocial stressors


Counselling or psychological support

#### MEDICATIONS



Anti-obesity drugs not recommended  
No routine use of statins or lipid lowering drugs

#### BARIATRIC SURGERY



BMI ≥ 40 or BMI ≥ 35 kg/m<sup>2</sup> & specific obesity-related comorbidities (T2DM, severe steatohepatitis, pseudotumor cerebri, & moderate-to-severe obstructive sleep apnea)

avoid excessive **SODIUM** intake  
further reduce dietary sodium intake in those with hypertension

**Reference:** Assessment and management of obesity and metabolic syndrome in children with CKD stages 2–5 on dialysis and after kidney transplantation—clinical practice recommendations from the Pediatric Renal Nutrition Taskforce  
 Stabouli S, et al. PedNeph, v.37,p 1–20 (2022)