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Evidence Based Adolescent Type 2 Diabetes Prevention

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PATIENT CARE ISSUE

Type 2 Diabetes (T2DM) is a growing problem in the pediatric population:
-Poor nutrition
-Lack of education
-Decrease in Exercise⁸

EVIDENCE-BASED PRACTICE QUESTION

Question: What are the best interventions to prevent T2DM in the pediatrics?
P: Pediatric age range (1-18)
I : Most effective ways to reduce risk of T2DM
C: Education, nutrition, exercise
O: Prevention strategies that proved most beneficial in reducing risk of T2DM:
Exercise, Healthy Nutrition, Education^{4,7}

REGISTERED NURSE INTERVIEW

Caitlyn Hicks RN at Dayton Children's
-BMI >95% a child is automatically put in the at risk category
-Could be as young as 2 or 3
-What is the hospital's policy on interventions?
-Education on: nutrition & exercise
-Family involvement is vital
-Involve community resources/services; doctor might prescribe Metformin

METHODS

Key Words Included:	Exclusion Criteria:
-Type 2 Diabetes Mellitus	-Treatment of T2DM
-Prevention interventions	-Type 1 diabetes
-Pediatric; adolescent	-Adult population

SYNTHESIS OF EVIDENCE

- Nutrition
 - Suggested alterations: total energy intake, macronutrient distribution, and types and amounts of carbohydrates²
 - Factors to address to increase nutrition: access to food, price of nutrient-dense food, presence of supermarkets, transportation, and the immediate food environment³
 - Eating plan strongly increases adherence to nutrition changes⁵
- Education
 - School interventions showed no statistical significant results
 - Community interventions are promising alternative⁶
 - Encourages family/community encouragement and accountability
 - Change implemented where children spend most time
 - Reaches families over focus on children³
- Exercise
 - Recommend >150 minutes of equivalent of brisk walking each week⁷
 - Low and high dose aerobic activity decreased adiposity²
 - Weight loss reduced risk by 16% per kilogram⁷
 - Benefits overall glycemic control⁴
 - Delay onset of diabetes⁴

RESULTS

In our search we found 165 articles; the following 12 were relevant to our search:

Title of Article	Level of Evidence
Nutrition education program design for youth with type 2 diabetes mellitus	Level 7
Exercise dose and diabetes risk in overweight and obese children: a randomized control trial	Lever 2
Preventing childhood obesity and diabetes: is it time to move out of the school?	Level 6
AADE position statement: diabetes and physical activity	Level 7
Healthy study rationale, design and methods: moderating risk of type 2 diabetes in multi-ethnic middle school students	Level 4
AADE position statement: Healthy eating: incorporating nutritional management into lifestyle	Level 7
Recommended community strategies and measurements to prevent obesity in the United States	Level 7
AADE position statement: Primary prevention of type 2 diabetes	Level 7
Taking action together: a YMCA-based protocol to prevent type-2 diabetes in high-BMI inner-city African American Children	Level 3
A school-based intervention for diabetes risk reduction	Level 3
Pathophysiology of type 2 diabetes mellitus in youth: the evolving chameleon	Level 1
Prevention and screening for type 2 diabetes in youth	Level 5

EVIDENCE-BASED PRACTICE RECOMMENDATIONS

- Physical Activity: 30 min./day or 150 min./week at the pace of a brisk walk^{3,7}
- Diet: low calorie, high nutrient diet^{1,5}
- Education About the disease, prevention methods, healthy lifestyles; teach parents about the influence and responsibility they have in their children's lives³

LIMITATIONS

Our research was limited because the pediatric population is considered an "at risk" population because of the age, therefore, special precautions must be taken that put strains on studies of these children.

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