



Do and Do not

Easy tips for managing diabetes in children

Children First Diabetes Second

Type 1 diabetes

- Type 1 diabetes can happen to any one
- Children with type 1 diabetes always require insulin
- Type 1 diabetes requires constant management 24 x 7 x 365
- Love, encouragement and education are soul of diabetes management
- When properly managed children with type 1 diabetes can live healthy and long lives.



- Type 1 diabetes is same as type 2 diabetes.
- Stop taking insulin and monitoring blood sugar levels in any circumstances
- Focus or emphasis only on a single aspect of diabetes management, either on diet, exercise, insulin or monitoring.
- Make a healthy life style plan only for the child with diabetes and exclude all others in the family and friends.
- Put a BIG NO for fun activities in the life of a child with type 1 diabetes.

Pancreas



Islet Cell
are not able
to produce
insulin



Type 1 diabetes

Key facts

There is nothing which the mother or father could have done to prevent type 1 diabetes in the child

If your child is suddenly:



urinating more



wetting the
bed or crib



often thirsty



feeling tired



losing weight

See your doctor it could be a sign¹ of type 1 diabetes

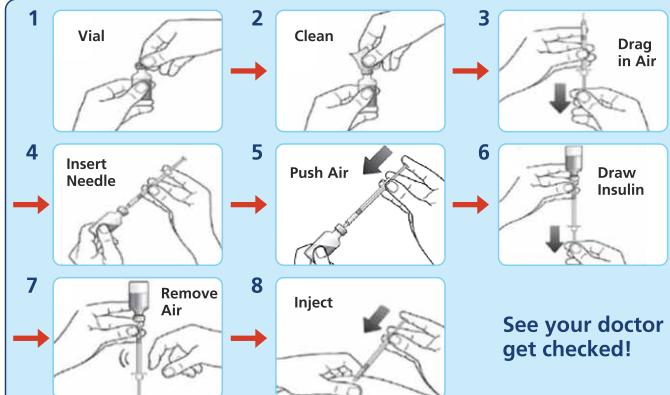
We know, you are looking for cure,
Lots of research is going on and we
have a hope in near future, but till then
it is good to stick to the treatment plan

1. <http://www.idf.org/lifeforachild/education-resources/dka-awareness> - Accessed on 13 oct 16

Insulin Injections

- Insulin is a natural hormone our body creates and needs.
- Insulin should be stored at 2-8°C¹. Insulin in use can be kept at room temperature for 30 days².
- Must take insulin as instructed by doctor and follow instructions of insulin - meal intervals. If the sugars are coming high or low, insulin doses need to be adjusted.
- Must roll insulin vial or cartridge gently before injecting
- While injecting, keep injections about an inch (or two finger widths) apart from previous injection site.

- Stop insulin without doctors advise.
- Keep the insulin in direct sunlight or in the freezer.
- Change insulin type or timings without consulting your Doctor.
- Inject in the same area all the time and into scar tissue or areas with broken vessels or varicose veins.
- Throw loose needles, syringes and vials /pens in rubbish or in open places.



Key facts

When people take insulin to manage their blood sugar, they are replacing something their body should normally be making

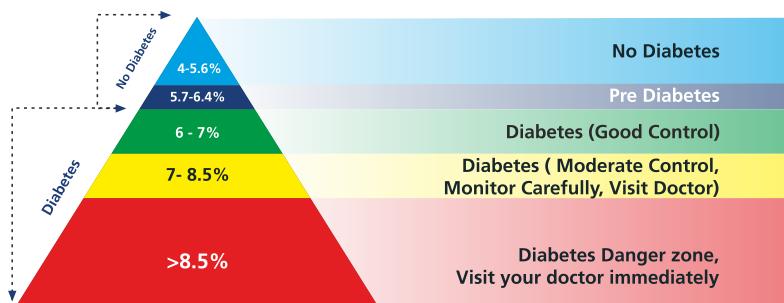
Insulin injection is the only treatment option currently available for good health of children with type 1 diabetes

¹ <http://www.consumermedsafety.org/insulin-safety-center/item/420>. ² <http://www.diabetes.org/living-with-diabetes/treatment-and-care/medication/insulin/insulin-storage-and-syringe-safety.html> - Accessed on 13 oct 16

Monitoring

- Monitor your blood glucose levels regularly as advised by your doctor.
- Wash and dry your hands before testing blood glucose levels.
- Know your target range of blood glucose levels before and after meals and action needed if it is not in range.
- Check coding and expiry date of strips
- Record your blood glucose values and correlate glucose value with HbA_{1c}

- STOP testing or lie about tests on any occasion.
- Squeeze your fingertip vigorously after pricking to have big drop of blood.
- Expose unused strips to moisture and extreme temperatures.
- Rely on a single reading for insulin dose adjustment.
- Interpret blood glucose reading without knowledge of time of test, previous meal and dose of insulin



Average blood glucose (mg/dL)	68	82	97	111	126	137	140	154	169	183	197	212	226	240	255	269	283	298	312	326
HbA _{1c}	4.0	4.5	5.0	5.5	6	6.4	6.5	7	7.5	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5	13

Correct place for
pricking while testing
(any three fingers)



Key facts

Blood glucose readings are not "good" or "bad." Instead, they are "high" or "low." This is more accurate and less judgmental

Monitoring is an integral part of diabetes treatment, as this can help you tell whether your insulin, diet and exercise plan are working or not

1. HbA_{1c} calculations using the formula: $28.7 \times A1C - 46.7 = eAG$ taken from <http://professional.diabetes.org/glucosecalculator.aspx>. * 2011 ADA guidelines.
*<https://www.aace.com/files/dccwhitepaper.pdf> **DCCT/ UKPDS³/ Kumamoto³ - Accessed on 13 oct 16

Diet and type 1 diabetes

Principles of Appropriate Diet

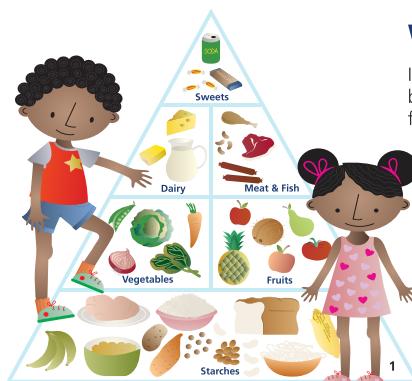


- Having in mind, proper growth and good blood glucose control, a balanced meal containing whole grains, vegetables and fruits needs to be planned for the child.
- If the child with diabetes is taking fixed amount of insulin, it is ideal to have fixed amount of carbohydrates and eat more or less at the same time every day.
- If the child and parents are able to understand the link between carbohydrates and insulin and are ready to learn self-adjustment of insulin doses, it is always good to give flexible diet with multiple doses of insulin.
- Always have timely snacks and meals to prevent hypoglycaemia and carry sugar or glucose or candies to treat hypoglycaemia.
- Diet plan must be made keeping in mind the liking of the child which includes region, religion, economical and family traditions and values.



- Skip meals and/or skip insulin.
- Think a diabetic diet means tasteless, boiled or bitter foods while making a diet plan.
- Be too strict on diet as it can lead to psychosocial problems and nutritional deficiency.
- Have lots of "sugar free" diabetic foods, as even though they don't contain sugar, they contain other carbohydrates which will affect blood sugar levels.
- Insist on sticking to a diet plan, even when the child is not able to follow it.

I work with my nurse to make my own food pyramid



What should I eat?

I eat more from the groups at the bottom of the pyramid and avoid foods from the top



Key facts

A happy family eats together.
Encourage the whole family to have same balanced healthy diet together

The only difference for children with diabetes is that they need to balance the quality, quantity and timing of their meals with the amount of insulin they take and with their activity level or vice versa

1. [http://www.pmsiforlife.com/diabetes_quality_practice/Patient%20Resource/20607428\(20\)_Food%20Pyramid%20Tearsheet.pdf](http://www.pmsiforlife.com/diabetes_quality_practice/Patient%20Resource/20607428(20)_Food%20Pyramid%20Tearsheet.pdf) - Accessed on 13 oct 16

Exercise and type 1 diabetes

Principles of Appropriate Exercise

- Physical activity should be encouraged in all children.
- Ideally all physical activities should be fun and be done in safe and supportive environment.
- Ideally the child should check blood glucose values before and after physical activity and if it is not possible, child should be involved in regulated activity at same time every day.
- All strenuous activities should include eating a snack e.g a fruit or 2 biscuits every 30 minutes and additional snack at night to prevent hypoglycaemia.
- It is good to have sufficient water and wear comfortable and appropriate clothes and shoes.



- Advise monotonous, repetitive and boring exercises for children.
- Discourage children from exercising fearing falls, injuries and hypoglycaemia.
- Take insulin on the part actively involved during exercise like at thigh before football match.
- Exercise in the time between injection and meal.
- Exercise when sugars are too high or too low and child is having ketones positive in blood and urine.

Pre-exercise carbohydrate replacement

Plasma blood glucose	Simple carbohydrate (CHO)
< 80mg/dL	Withhold physical activity + ingest 15 g CHO (cereal bar, honey sachets, etc.).
80 to 140 mg/dL	Ingest 1 to 2 g/kg of CHO prior to activity.
> 140 mg/dL < 250 mg/dL	Within safety range; ingest 15 to 30 g CHO after activity.
> 300 mg/dL, no ketonuria	Begin activity. No CHO replacement necessary.
> 300 mg/dL, with ketonuria	Postpone activity until ketone levels return to normal. Take fluids (water). No CHO replacement necessary.

1. CHO + simple carbohydrate

Source: Adapted from the Brazilian Diabetes Society (Sociedade Brasileira de Diabetes, SBD).

It is always fun to play with friends



This also helps to keep blood glucose in normal range

Key facts

Although exercise does have health benefits, the main reason for exercise should be to enjoy it. Exercise should not be a penance punctuated by hypo or hyperglycaemia.

All work and no play will not control diabetes in any way.