# 📘 Diabetic Health & Nutrition Knowledge Base

## 1. Diabetic-Friendly Foods

### 1.1 Foods to Eat (General)

- Whole grains: Brown rice, oats, quinoa, whole wheat roti  
- Non-starchy vegetables: Spinach, broccoli, carrots, beans  
- Lean proteins: Eggs, paneer, tofu, chicken (grilled), dals  
- Healthy fats: Nuts, seeds, avocado, olive oil, ghee (limited)  
- Fruits with low glycemic index: Apples, guava, berries, pears  
- Legumes: Chickpeas, kidney beans, moong, chana  
- Dairy (in moderation): Low-fat milk, Greek yogurt

### 1.2 Foods to Avoid

- Refined carbs: White bread, maida, bakery items  
- Sugary drinks: Soft drinks, fruit juices, energy drinks  
- Deep-fried snacks: Samosa, kachori, chips  
- High-GI fruits: Mango, banana, watermelon (limit or eat with protein)  
- Processed foods: Biscuits, chips, noodles  
- Alcohol (limit or avoid if uncontrolled sugar)

## 2. Types of Insulin & Their Uses

🔹 Rapid-acting insulin:  
- Examples: Lispro (Humalog), Aspart (Novolog), Glulisine  
- Action: Starts in 10–30 minutes, peaks in 1–3 hours, lasts 3–5 hours  
- Use: Taken before meals  
  
🔹 Short-acting insulin (Regular insulin):  
- Examples: Humulin R, Novolin R  
- Action: Starts in 30–60 mins, peaks in 2–5 hours, lasts 5–8 hours  
- Use: Taken 30–45 minutes before meals  
  
🔹 Intermediate-acting insulin:  
- Examples: NPH (Humulin N, Novolin N)  
- Action: Starts in 1–2 hours, peaks in 4–12 hours, lasts up to 18 hours  
- Use: Usually taken twice daily  
  
🔹 Long-acting insulin:  
- Examples: Glargine (Lantus), Detemir (Levemir), Degludec (Tresiba)  
- Action: Starts in 1–2 hours, no peak, lasts up to 24–42 hours  
- Use: Provides baseline control, usually once or twice a day  
  
🔹 Mixed insulin (Premixed):  
- Examples: Ryzodeg, Novomix 30, Humalog Mix 75/25  
- Use: Combines both rapid & intermediate action; taken before meals

## 3. Diabetic Nutrition for Weight Management

### 3.1 For Weight Gain

- Eat 5–6 small meals/day with high protein: eggs, paneer, dals, tofu  
- Add healthy fats: peanut butter, almonds, walnuts, ghee (1 tsp/day)  
- Use diabetic-friendly shakes (with oats, whey, nuts)  
- Include complex carbs: sweet potatoes, multigrain roti, brown rice  
- Eat bedtime snacks to avoid night-time hypoglycemia

### 3.2 For Weight Loss

- Reduce portion size, increase fiber (salads, whole grains)  
- Cut refined carbs and sugars completely  
- Add 30–45 minutes daily walking/cardio  
- Prefer protein in every meal: boiled egg, sprouts, Greek yogurt  
- Avoid late-night snacking

### 3.3 To Stay Fit & Balanced

- Maintain a balanced plate: 50% veggies, 25% carbs, 25% protein  
- Drink 2–3L water daily  
- Exercise 4–5 times a week (mix cardio + strength)  
- Monitor sugar before and after workouts  
- Sleep 7–8 hours daily to maintain insulin sensitivity

## 4. Ideal Weight for Diabetics

Use BMI (Body Mass Index) to determine ideal weight:  
  
BMI = weight (kg) / height (m)^2  
  
Ideal BMI range for diabetics: 18.5 – 24.9  
  
Example:  
- Height: 5'7" (1.70 m) → Ideal weight = 53 – 72 kg  
- Height: 5'4" (1.62 m) → Ideal weight = 49 – 65 kg  
  
Note: Muscle gain is preferred over fat gain for diabetics.