Original algorithm from Mechanick et al. (2012) article
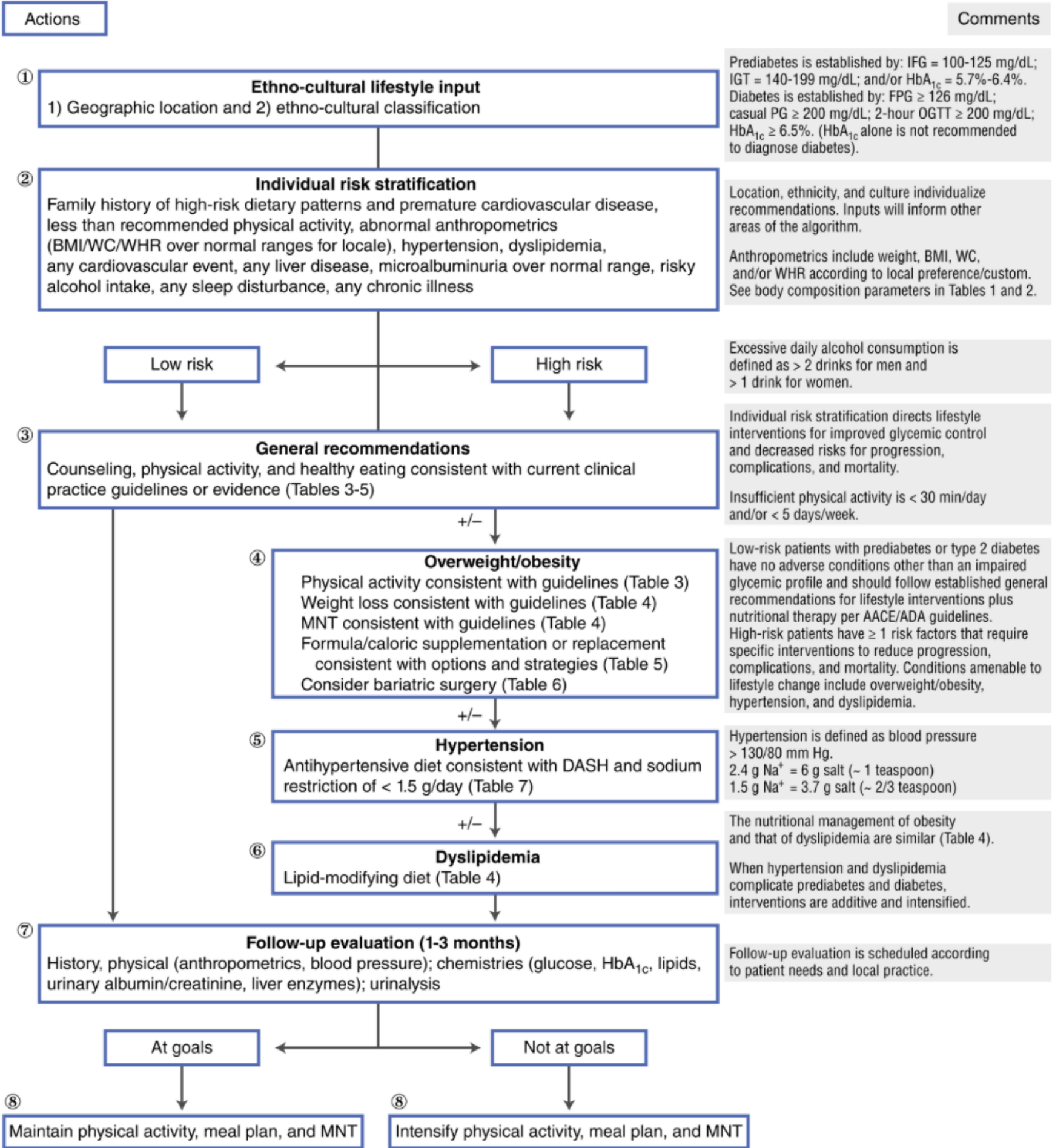
Actions

Comments

① **Ethno-cultural lifestyle input**
1) Geographic location and 2) ethno-cultural classification

Prediabetes is established by: IFG = 100-125 mg/dL; IGT = 140-199 mg/dL; and/or HbA_{1c} = 5.7%-6.4%. Diabetes is established by: FPG ≥ 126 mg/dL; casual PG ≥ 200 mg/dL; 2-hour OGTT ≥ 200 mg/dL; HbA_{1c} ≥ 6.5%. (HbA_{1c} alone is not recommended to diagnose diabetes).

② **Individual risk stratification**
Family history of high-risk dietary patterns and premature cardiovascular disease, less than recommended physical activity, abnormal anthropometrics (BMI/WC/WHR over normal ranges for locale), hypertension, dyslipidemia, any cardiovascular event, any liver disease, microalbuminuria over normal range, risky alcohol intake, any sleep disturbance, any chronic illness

Location, ethnicity, and culture individualize recommendations. Inputs will inform other areas of the algorithm.

Anthropometrics include weight, BMI, WC, and/or WHR according to local preference/custom. See body composition parameters in Tables 1 and 2.

Low risk ←→ High risk

Excessive daily alcohol consumption is defined as > 2 drinks for men and > 1 drink for women.

③ **General recommendations**
Counseling, physical activity, and healthy eating consistent with current clinical practice guidelines or evidence (Tables 3-5)

Individual risk stratification directs lifestyle interventions for improved glycemic control and decreased risks for progression, complications, and mortality.

Insufficient physical activity is < 30 min/day and/or < 5 days/week.

+/−

④ **Overweight/obesity**
Physical activity consistent with guidelines (Table 3)
Weight loss consistent with guidelines (Table 4)
MNT consistent with guidelines (Table 4)
Formula/caloric supplementation or replacement consistent with options and strategies (Table 5)
Consider bariatric surgery (Table 6)

Low-risk patients with prediabetes or type 2 diabetes have no adverse conditions other than an impaired glycemic profile and should follow established general recommendations for lifestyle interventions plus nutritional therapy per AACE/ADA guidelines. High-risk patients have ≥ 1 risk factors that require specific interventions to reduce progression, complications, and mortality. Conditions amenable to lifestyle change include overweight/obesity, hypertension, and dyslipidemia.

+/−

⑤ **Hypertension**
Antihypertensive diet consistent with DASH and sodium restriction of < 1.5 g/day (Table 7)

Hypertension is defined as blood pressure > 130/80 mm Hg.
2.4 g Na^+ = 6 g salt (~ 1 teaspoon)
1.5 g Na^+ = 3.7 g salt (~ 2/3 teaspoon)

+/−

⑥ **Dyslipidemia**
Lipid-modifying diet (Table 4)

The nutritional management of obesity and that of dyslipidemia are similar (Table 4).

When hypertension and dyslipidemia complicate prediabetes and diabetes, interventions are additive and intensified.

⑦ **Follow-up evaluation (1-3 months)**
History, physical (anthropometrics, blood pressure); chemistries (glucose, HbA_{1c}, lipids, urinary albumin/creatinine, liver enzymes); urinalysis

Follow-up evaluation is scheduled according to patient needs and local practice.

At goals ←→ Not at goals

⑧ Maintain physical activity, meal plan, and MNT

⑧ Intensify physical activity, meal plan, and MNT

Fig. 1 Transcultural medical nutrition algorithm for prediabetes and type 2 diabetes. AACE—American Association of Clinical Endocrinologists; ADA—American Diabetes Association; BMI—body mass index; DASH—Dietary Approaches to Stop Hypertension; FPG— fasting plasma glucose; HbA_{1c}—glycosylated hemoglobin A_{1c}; IFG —impaired fasting glucose; IGT—impaired glucose tolerance; MNT— medical nutrition therapy; OGTT—oral glucose tolerance test; PG— plasma glucose; WC—waist circumference; WHR—waist-to-hip ratio