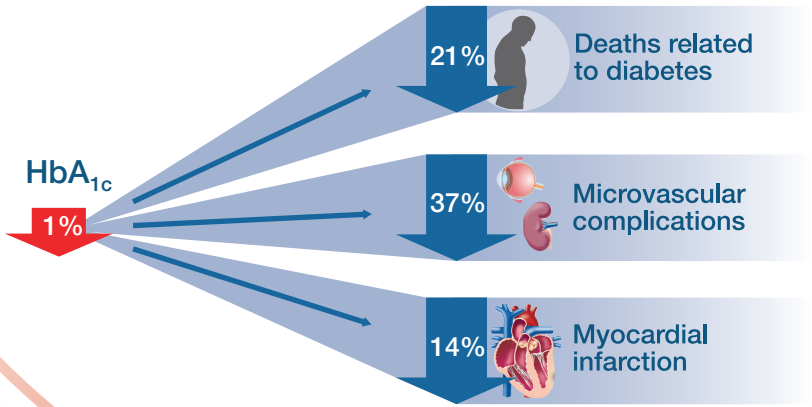
FACT *sheet 1* Good glycemic control

CONTROL TO GOAL

Did you know?

- Good glycemic control significantly reduces the risk of serious, long-term complications of type 2 diabetes.
- A 1% reduction in HbA_{1c} reduces diabetes-related deaths by 21%, risk of microvascular complications by 37% and myocardial infarction by 14%.[1]
- Over 60% of people with type 2 diabetes are still **not** achieving recommended glycemic goals despite stringent guidelines for diabetes management.[2-6]



A call to action

Urgent action is needed to increase the proportion of individuals achieving recommended glycemic goals.

Management strategies that aim to get patients to goal for glycemic control should reduce the risk of serious, long-term complications of diabetes and improve quality of life.

Global Partnership for Effective Diabetes Management

Recommendation:

▶ **Aim for good glycemic control, defined as HbA_{1c} < 6.5%*[7]**

*Or fasting/preprandial plasma glucose < 110 mg/dL (6.0 mmol/L) where assessment of HbA_{1c} is not possible.

1 Stratton IM, *et al. Br Med J* 2000; **321**:405–412.
2 Liebl A, *et al. Diabetologia* 2002; **45**:S23–S28.
3 Saydah SH, *et al. JAMA* 2004; **291**:335–342.
4 American Diabetes Association. *Diabetes Care* 2004; **27** (Suppl. 1):S15–S34.
5 European Diabetes Policy Group. *Diabet Med* 1999; **16**:716–730.
6 Canadian Diabetes Association. *Can J Diabetes* 2003; **27** (Suppl. 2):S1–S152.
7 Del Prato S, *et al. Int J Clin Pract* 2005; **59**:1345–1355.

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FACT *sheet 2* Regular monitoring of glycemia

CONTROL TO GOAL

Did you know?

- Frequent self-monitoring of blood glucose levels has been associated with better glycemic control.[1]
- 70% of patients who regularly self-monitor blood glucose achieve $HbA_{1c} \leq 8\%$ compared with only 18% of patients who irregularly self-monitor and 22% of patients who do not self-monitor.[2]

Patient
Self-monitoring of blood glucose

+

Healthcare professionals
Regular monitoring of HbA_{1c}

Diabetes care team
Combined synergistic efforts of team are crucial to ensure effective monitoring of glycemic control

A call to action

Proactive management of diabetes will ensure that glycemic goals are being met and maintained.

Regular monitoring by both patients and healthcare professionals allows treatment to be frequently reviewed and, where appropriate, necessary modification and self-modifications in treatment regimens to be implemented.

Global Partnership for Effective Diabetes Management

Recommendation:

▶ **Monitor HbA_{1c} every 3 months in addition to regular glucose self-monitoring[3]**

1 Karter AJ, *et al. Am J Med* 2001; **111**:1–9.
2 Blonde L, *et al. Diabetes Care* 2002; **25**:245–246.
3 Del Prato S, *et al. Int J Clin Pract* 2005; **59**:1345–1355.

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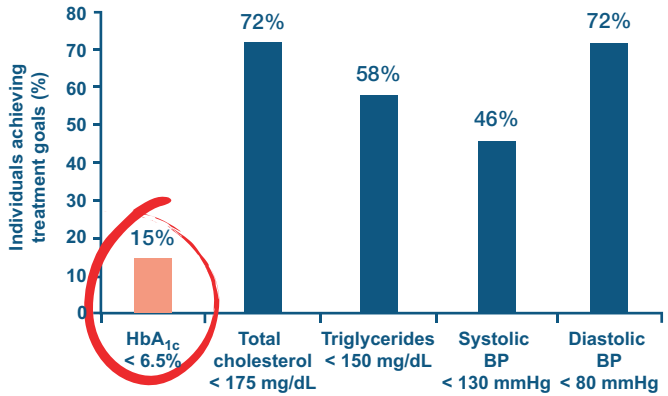
FACT *sheet 3*

Holistic approach to type 2 diabetes management

CONTROL TO GOAL

Did you know?

- Type 2 diabetes is a complex disorder characterized by hyperglycemia, dyslipidemia and hypertension – recommended treatment targets exist for all three.[1-3]
- Hyperglycemia, dyslipidemia and hypertension are all significant risk factors for vascular complications and mortality in people with diabetes.[4-6]
- Only 15% of patients in a recent study achieved HbA_{1c} goals, while a significantly higher proportion reached lipid and blood pressure goals.[7]



A call to action

The need for a holistic approach to treating type 2 diabetes is reflected in current treatment guidelines, which include targets for glycemic control, lipids and blood pressure.[1-3]

In order to reduce the risk of diabetes-related complications, individuals should receive intensive and effective treatment for all metabolic disturbances, including hyperglycemia.

Global Partnership for Effective Diabetes Management

Recommendation:

▶ **Aggressively manage hyperglycemia, dyslipidemia and hypertension with the same intensity to obtain the best patient outcome[8]**

1 American Diabetes Association. *Diabetes Care* 2004; **27** (Suppl. 1):S15–S34.
2 European Diabetes Policy Group. *Diabet Med* 1999; **16**:716–730.
3 Canadian Diabetes Association. *Can J Diabetes* 2003; **27** (Suppl. 2):S1–S152.
4 Stamler J, *et al. Diabetes Care* 1993; **16**:434–444.
5 UK Prospective Diabetes Study (UKPDS) Group. *BMJ* 1998; **317**:703–713.
6 Stratton IM, *et al. Br Med J* 2000; **321**:405–412.
7 Gaede P, *et al. N Eng J Med* 2003; **348**:383–393.
8 Del Prato S, *et al. Int J Clin Pract* 2005; **59**:1345–1355.

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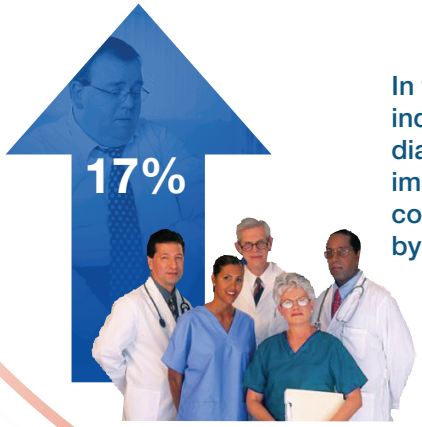
FACT *sheet 4* The role of specialist care units

CONTROL TO GOAL

Did you know?

- Given the complex nature of type 2 diabetes, involvement of professionals with relevant expertise is essential to identify the needs of the individual.
- The application of extensive knowledge of type 2 diabetes, medications available now and in the future and patient education are likely to improve outcomes.
- Patients who visit specialist diabetes care units as well as their family physician have significantly lower risk of mortality and increased survival compared with patients who only visit their physician.[1]



In the Verona Diabetes Study, individuals attending a specialist diabetes center had a substantially improved chance of survival compared with those seen only by family physicians

A call to action

Involvement of healthcare professionals with particular expertise in the management of diabetes will help more individuals reach glycemic goal and thus reduce the risk of complications.

Careful review of treatment, including vigilant monitoring and motivation, and robust support for the individual's educational requirements, should improve glycemic control.

Global Partnership for Effective Diabetes Management

Recommendation:

▶ **Refer all newly diagnosed patients to a unit specializing in diabetes care where possible[2]**

1 Verlato G, *et al. Diabetes Care* 1996; **19**:211–213.
2 Del Prato S, *et al. Int J Clin Pract* 2005; **59**:1345–1355.

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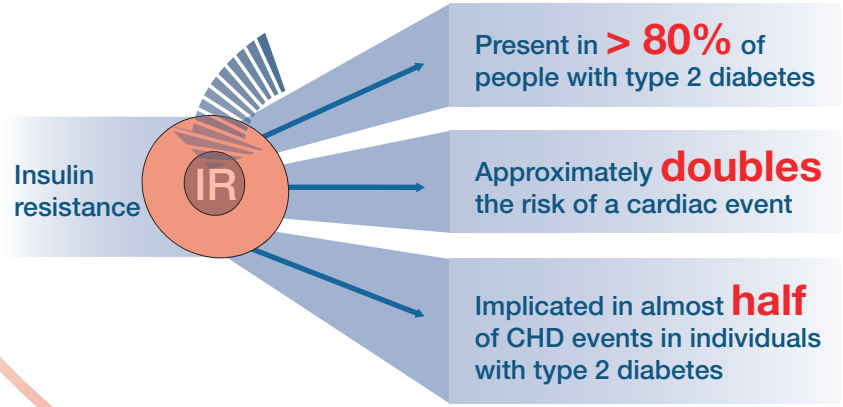
FACT *sheet 5*

Address the underlying pathophysiology of type 2 diabetes

CONTROL TO GOAL

Did you know?

- Approximately 80–85% of people with type 2 diabetes have insulin resistance – the inability of the body to use its own insulin.[1,2]
- β-cell dysfunction – the reduced ability of pancreatic β-cells to secrete insulin in response to hyperglycemia – is a major defect in patients with type 2 diabetes.[3,4]
- Insulin resistance, implicated in almost 50% of cardiovascular events in type 2 diabetes, is as strong a risk factor for cardiovascular disease as smoking.[5–7]



A call to action

When selecting a therapeutic regimen, it is important to consider whether agents can address the underlying pathophysiology of type 2 diabetes.

Insulin resistance and β-cell dysfunction are both important targets for therapeutic intervention to improve outcomes in type 2 diabetes.

Global Partnership for Effective Diabetes Management

Recommendation:

▶ **Address the underlying pathophysiology, including treatment of insulin resistance[8]**

1 Bonora E, *et al. Diabetes* 1998; **47**:1643–1649.
2 Haffner SM, *et al. Circulation* 2000; **101**:975–980.
3 UK Prospective Diabetes Study (UKPDS) Group. *Diabetes* 1995; **44**:1249–1258.
4 UK Prospective Diabetes Study (UKPDS) Group. *Lancet* 1998; **352**:837–853.
5 Hanley AJ, *et al. Diabetes Care* 2002; **25**:1177–1184.
6 Bonora E, *et al. Diabetes Care* 2002; **25**:1135–1141.
7 Strutton D, *et al. Am J Man Care* 2001; **7**:765–773.
8 Del Prato S, *et al. Int J Clin Pract* 2005; **59**:1345–1355.

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FACT *sheet 6* The need for an early and intensive approach

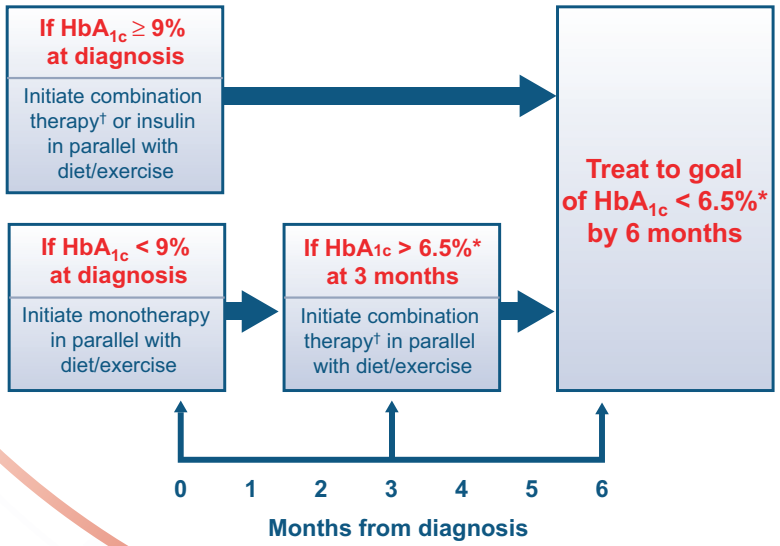
CONTROL TO GOAL

Did you know?

- Traditional stepwise management of type 2 diabetes involves diet and exercise → oral monotherapy → up-titration of oral monotherapy → combination therapy and finally → addition of insulin.

- It is a reactive strategy that can involve significant delays between steps and, therefore, prolong the loss of glycemic control. Even short periods of hyperglycemia significantly increase the risk of complications.[1-3]

Paradigm for early combination treatment



A call to action

There is a need to move away from a reactive, stepwise management approach towards a new treatment paradigm, including the use of early combination therapy.

A proactive approach is more likely to ensure individuals achieve goals more quickly and maintain them, while minimizing exposure to potentially damaging periods of hyperglycemia.

Global Partnership for Effective Diabetes Management

Recommendation:

▶ **Treat patients intensively so as to achieve target HbA_{1c} < 6.5%* within 6 months of diagnosis[4]**

*Or fasting/preprandial plasma glucose < 110 mg/dL (6.0 mmol/L) where assessment of HbA_{1c} is not possible.
†Combination therapy should include agents with complementary mechanisms of action.

1 EDIC Group. *JAMA* 2003; **290**:2159–2167.
2 EDIC Group. *JAMA* 2002; **287**:2563–2569.
3 Nathan DM, *et al. N Engl J Med* 2003; **348**:2294–2303.
4 Del Prato S, *et al. Int J Clin Pract* 2005; **59**:1345–1355.

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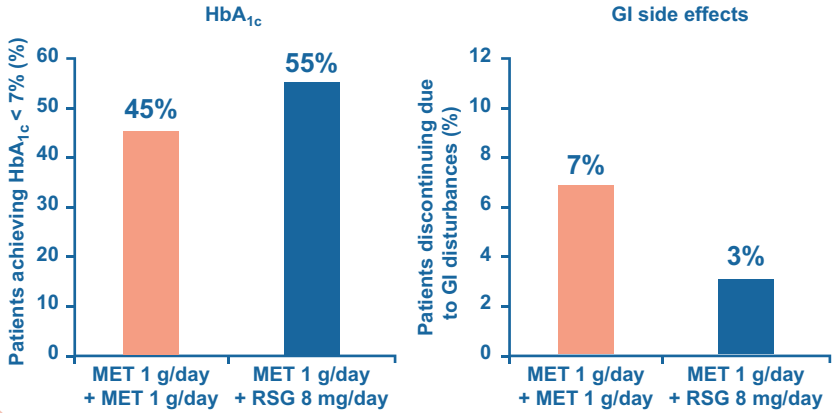
FACT *sheet 7*

Benefits of earlier initiation of combination therapy

CONTROL TO GOAL

Did you know?

- Approximately 75% of type 2 diabetes patients **do not** achieve their glycemic goals with monotherapy.[1]
- Combination therapy offers several potential advantages, including better glycemic control and improved tolerability, compared with high-dose monotherapy.
- In one study, 55% of patients achieved HbA_{1c} < 7% with combination therapy compared with 45% of patients receiving up-titrated monotherapy. Combination therapy was also better tolerated.[2]



MET = metformin
RSG = rosiglitazone

A call to action

Earlier initiation of combination therapy has the potential to increase the proportion of individuals reaching glycemic goals, reduce exposure to periods of hyperglycemia and reduce risk of complications.

The stepwise treatment approach of diet and exercise followed by the addition of increasing doses of oral monotherapy can cause unacceptable delays in assisting individuals to achieve their glycemic goals.

Global Partnership for Effective Diabetes Management

Recommendation:

▶ **After 3 months, if patients are not at target HbA_{1c} < 6.5%*, consider combination therapy[3]**

*Or fasting/preprandial plasma glucose < 110 mg/dL (6.0 mmol/L) where assessment of HbA_{1c} is not possible.

1 Turner RC, *et al. JAMA* 1999; **281**:2005–2012.
2 Rosenstock J, *et al. Diabetes* 2004; **53** (Suppl 2):A144.
3 Del Prato S, *et al. Int J Clin Pract* 2005; **59**:1345–1355.

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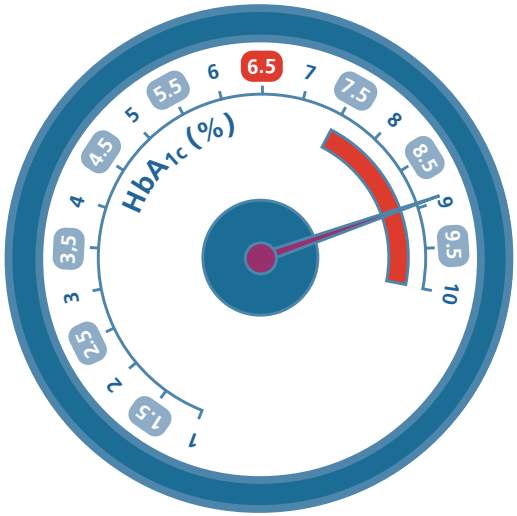
FACT *sheet 8*

Treatment of patients with HbA_{1c} ≥ 9% at diagnosis

CONTROL TO GOAL

Did you know?

- Up to 50% of people with type 2 diabetes have signs of vascular damage at diagnosis.[1]
- High HbA_{1c} levels increase the risk of complications. This risk can be dramatically reduced through glycemic control; a 1% reduction in HbA_{1c} reduces the risk of microvascular complications by 37% and myocardial infarction by 14%.[2]
- Monotherapy or late introduction of combination therapy is often inadequate for glycemic control in individuals with high HbA_{1c} at diagnosis.



A call to action

Early and effective treatment combined with patient education is particularly important in individuals with high HbA_{1c} at diagnosis.

To minimize exposure to high levels of glucose, individuals presenting with HbA_{1c} ≥ 9% should receive intensive treatment to help them to achieve goal as quickly as possible.

Global Partnership for Effective Diabetes Management

Recommendation:

▶ **Initiate combination therapy or insulin immediately for all patients with HbA_{1c} ≥ 9% at diagnosis[3]**

1 UK Prospective Diabetes Study (UKPDS) Group. *Diabetes Res* 1990; **13**:1–11.
2 Stratton IM, *et al. BMJ* 2000; **321**:405–412.
3 Del Prato S, *et al. Int J Clin Pract* 2005; **59**:1345–1355.

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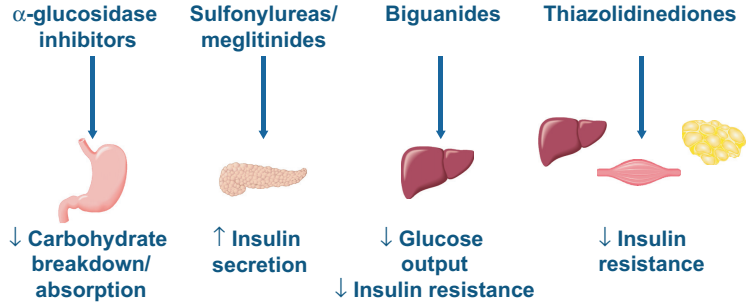
FACT *sheet 9* Benefits of complementary agents

CONTROL TO GOAL

Did you know?

A wide range of treatment options are available for type 2 diabetes, each with distinct modes of action.

- α-glucosidase inhibitors (e.g. acarbose) delay digestion and absorption of carbohydrates.[1,2]
- Sulfonylureas and meglitinides stimulate insulin release from the pancreas.[1,2]
- Biguanides (e.g. metformin) suppress liver glucose output, enhance insulin sensitivity in the liver and stimulate insulin-mediated glucose disposal – they do not stimulate insulin secretion.[1,2]
- Thiazolidinediones (e.g. rosiglitazone, pioglitazone) decrease insulin resistance in fat, muscle and the liver.[1,2]



A call to action

When selecting agents for combination therapy, using agents from different classes may give the best effects due to their complementary modes of action.[3-5]

It is important to have knowledge of the treatments available for type 2 diabetes and to choose treatments that target the underlying pathophysiology.

Global Partnership for Effective Diabetes Management

Recommendation:

▶ **Use combinations of oral antidiabetic agents with complementary mechanisms of action[6]**

1 Kobayashi M. *Diabetes Obes Metab* 1999; **1** (Suppl. 1):S32–S40.
2 Nattrass M, *et al. Baillieres Best Pract Res Clin Endocrinol Metab* 1999; **13**:309–329.
3 Rosenstock J, *et al. Diabetes* 2004; **53** (Suppl 2):A144.
4 Rosenstock J, *et al. Diabetes* 2004; **53** (Suppl 2):A160.
5 Vinik A, *et al. Diabetes* 2004; **53** (Suppl 2):A162.
6 Del Prato S, *et al. Int J Clin Pract* 2005; **59**:1345–1355.

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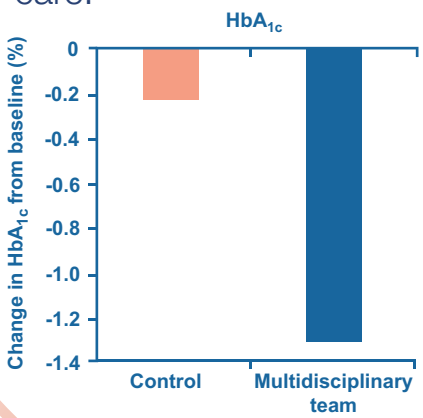
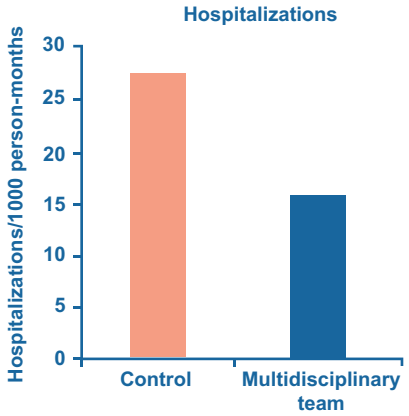
FACT *sheet 10* The role of the multidisciplinary team

CONTROL TO GOAL

Did you know?

- Type 2 diabetes is a complex disorder – effective management requires broad expertise.
- A multidisciplinary team combines the experience of diabetologists, cardiologists, nurse specialists, dieticians, podiatrists and other specialists, and places the individual at the center of the team.
- A multidisciplinary team approach has demonstrated better glycemic control, fewer complications and hospitalizations, improved patient quality of life and lower annual costs compared with standard primary care.[1-4]





A call to action

A multidisciplinary team approach, where available, will combine the experience of a diverse group of healthcare professionals to assist more individuals to reach goal.

Multidisciplinary teams may provide continuous, specialized and consistent care focused on individual needs. Placing the individual at the center of the team will involve them in decision making and help educate and support them in taking control of their condition.

Global Partnership for Effective Diabetes Management

Recommendation:

▶ **Implement a multi- and interdisciplinary team approach to diabetes management to encourage patient education and self care and share responsibility for patients achieving glucose goals[5]**

1 UK Prospective Diabetes Study (UKPDS) Group. *Lancet* 1998; **352**:837–853.
2 Sadur CN, *et al. Diabetes Care* 1999; **22**:2011–2017.
3 Codispoti C, *et al. J Okla State Med* Assoc 2004; **97**:201–204.
4 Gagliardino JJ, *et al. Diabetes Care* 2001; **24**:1001–1007.
5 Del Prato S, *et al. Int J Clin Pract* 2005; **59**:1345–1355.

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