

# IDW Symposium Juni 2015

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Schweizerische Gesellschaft für  
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# Diabetes Epidemiologie

**1/12**  
people with  
**DIABETES**



**1** healthcare  
  
**in 9**  
**IS SPENT ON DIABETES**

In 2014 diabetes expenditure reached US\$612 billion



**IDF DIABETES ATLAS** Sixth edition



SANOFI DIABETES



ACCUCHEK



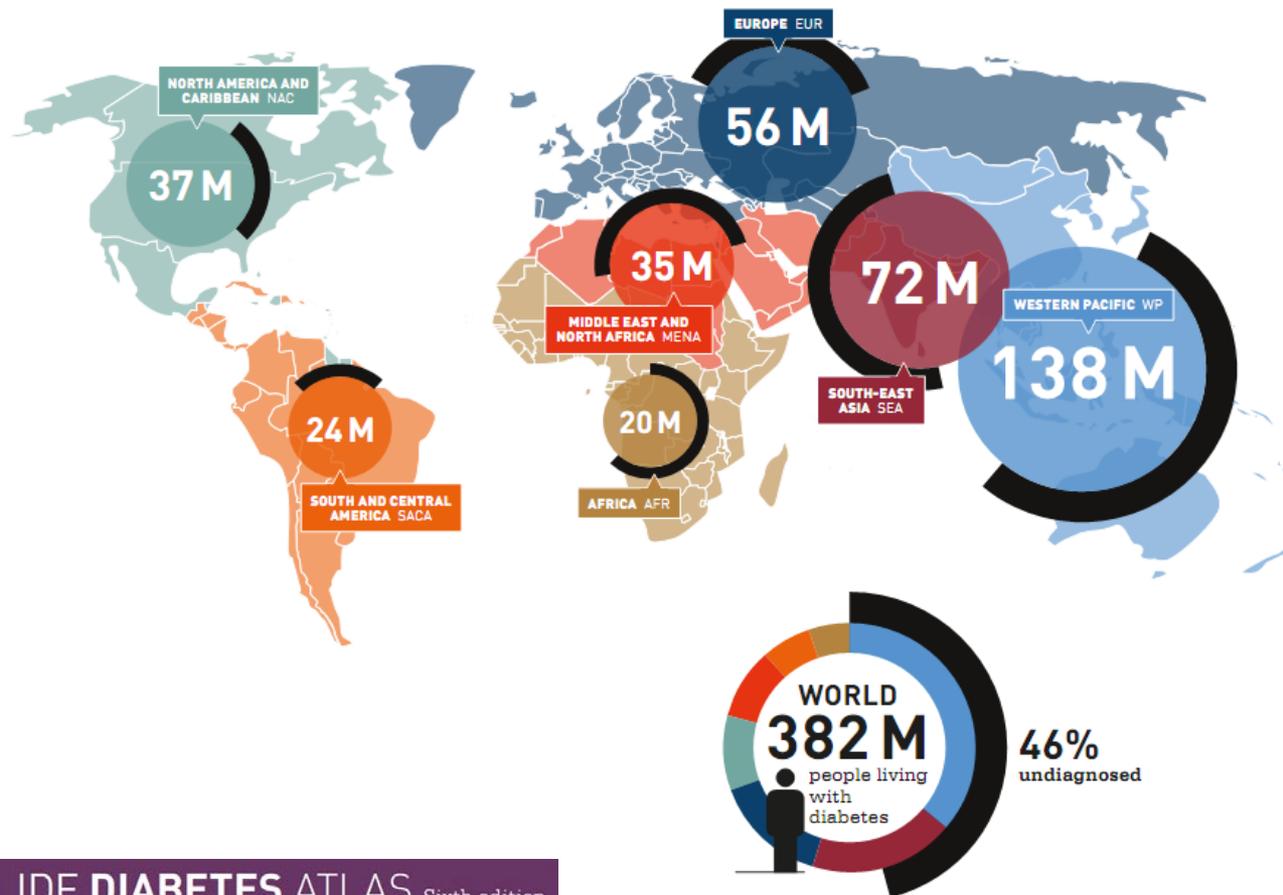
NOVARTIS  
PHARMACEUTICALS

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# Diabetes Epidemiologie

Number of people with diabetes by IDF Region, 2013

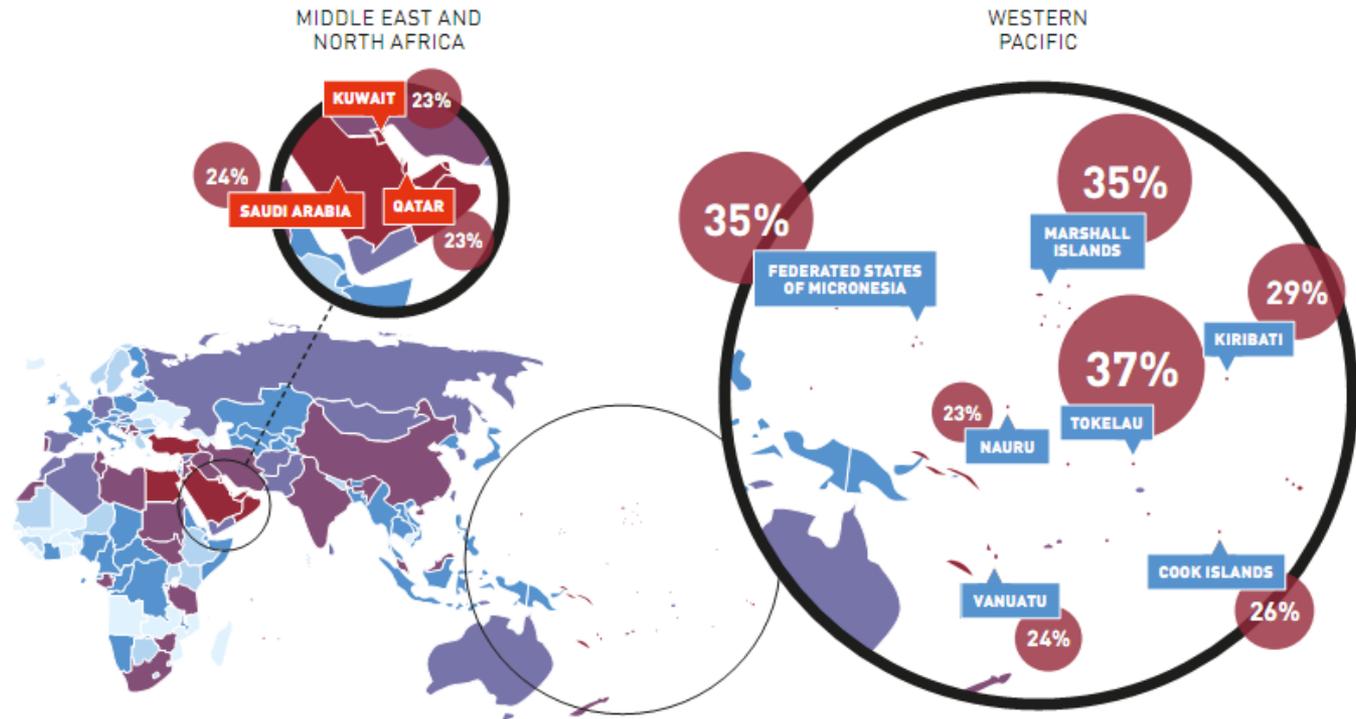


International Diabetes Federation **IDF DIABETES ATLAS** Sixth edition

# Diabetes Epidemiologie

Top 10 countries/territories for prevalence\* (% of diabetes (20-79 years), 2013)

\* comparative prevalence



IDF DIABETES ATLAS Sixth edition



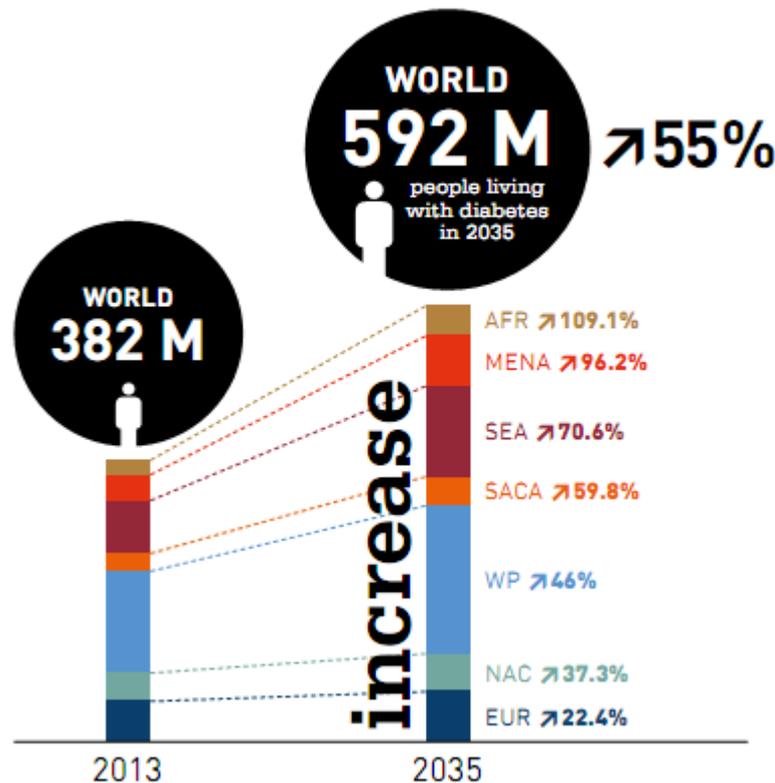
SANOFI DIABETES



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# Diabetes Epidemiologie



382 Millionen Personen sind Diabetiker

Bis 2035 werden es 592 Millionen sein



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AstraZeneca



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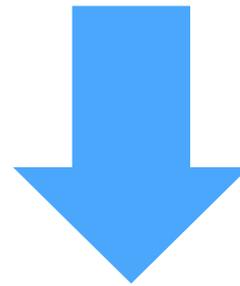


# Herausforderungen für den Hausarzt bei Behandlung von Typ 2 DM

- viele Patienten
- viele Komplikationen
- viele (neue!) Medikamente
- viel Geld (vor allem für neue Medikamente)
- intensives Marketing, aber wenig gute Endpunkte



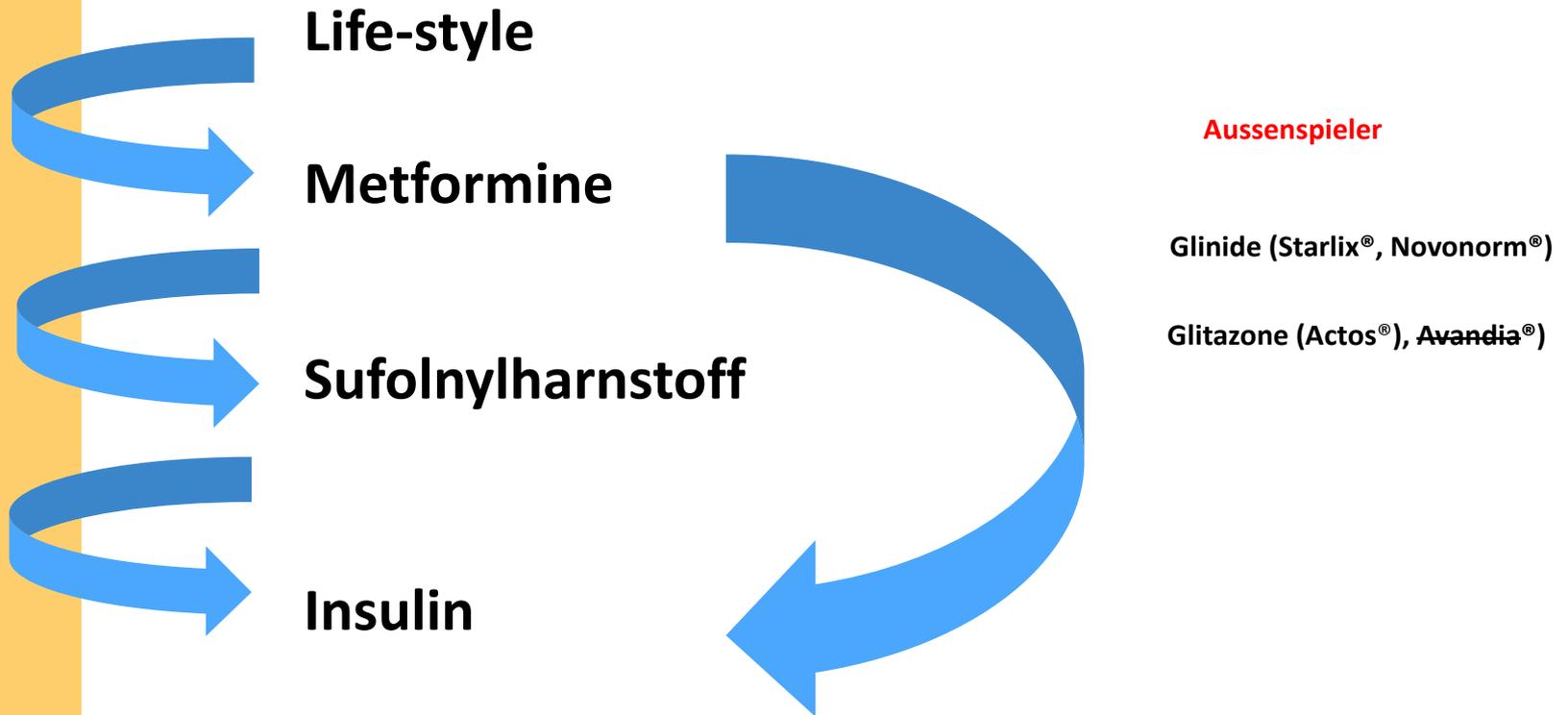
# European Society for the Study of Diabetes (EASD) / American Diabetes Association (ADA) Position Statement 2012



**Management of hyperglycaemia in type 2 diabetes, 2015:  
a patient-centred approach. Update to a Position Statement  
of the American Diabetes Association and the European  
Association for the Study of Diabetes**



# « klassischer Weg »



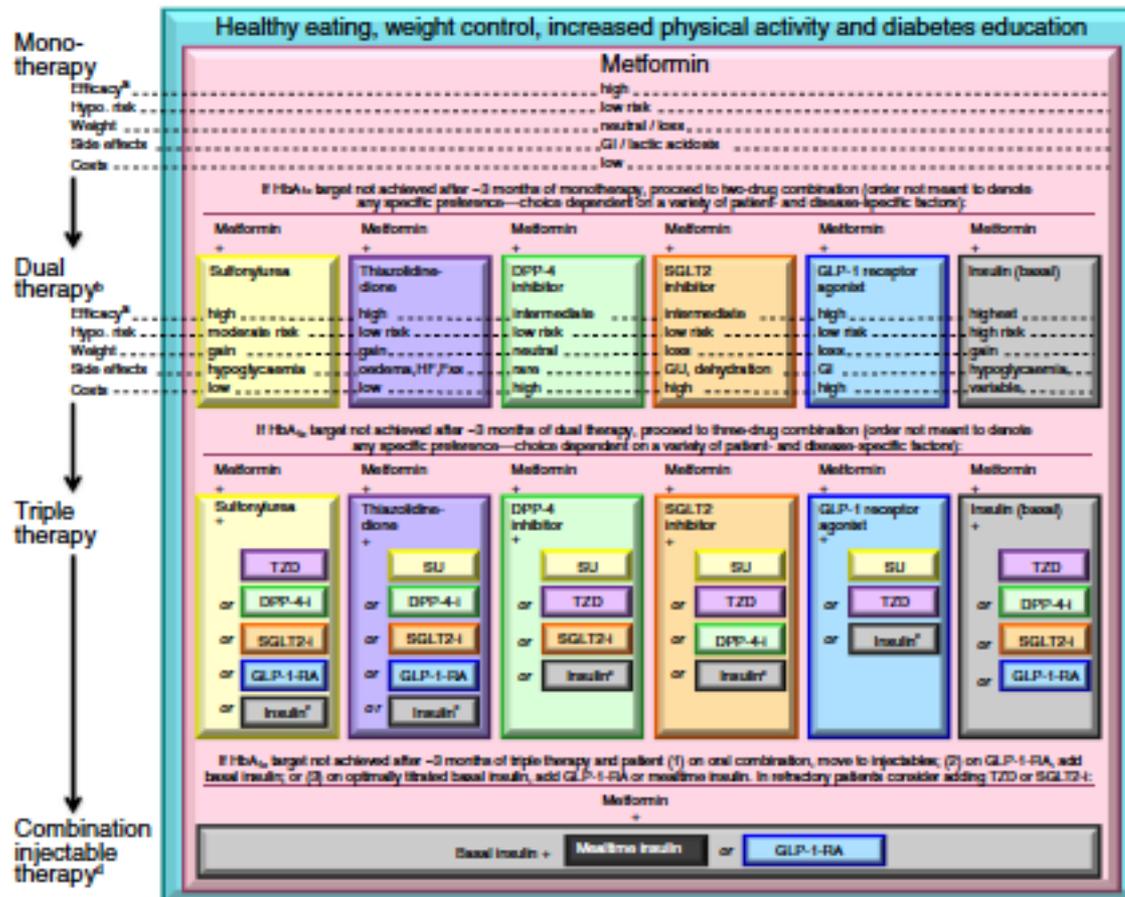
# 2015 Medikamente

Properties of available glucose-lowering agents in the USA and Europe that may guide individualised treatment choices in patients with type 2 diabetes						
Class	Compound(s)	Cellular mechanism(s)	Primary physiological action(s)	Advantages	Disadvantages	Cost <sup>e</sup>
Biguanides	• Metformin	Activates AMP-kinase (? other)	• ↓ Hepatic glucose production	• Extensive experience • No hypoglycaemia • ↓ CVD events (UKPDS)	• Gastrointestinal side effects (diarrhoea, abdominal cramping) • Lactic acidosis risk (rare) • Vitamin B <sub>12</sub> deficiency • Multiple contraindications: CKD, acidosis, hypoxia, dehydration, etc.	Low
Sulfonylureas	2nd generation • Glibenclamide/glyburide • Glipizide • Glimepiride • Gliclazide <sup>b</sup> • Glimpiride	Closes K <sub>ATP</sub> channels on beta cell plasma membranes	• ↑ Insulin secretion	• Extensive experience • ↓ Microvascular risk (UKPDS)	• Hypoglycaemia • ↑ Weight • ? Blunts myocardial ischaemic preconditioning • Low durability	Low
Meglitinides (glinides)	• Repaglinide • Nateglinide	Closes K <sub>ATP</sub> channels on beta cell plasma membranes	• ↑ Insulin secretion	• ↓ Postprandial glucose excursions • Dosing flexibility	• Hypoglycaemia • ↑ Weight • ? Blunts myocardial ischaemic preconditioning • Frequent dosing schedule	Moderate
TZDs	• Pioglitazone <sup>c</sup> • Rosiglitazone <sup>d</sup>	Activates the nuclear transcription factor PPAR-γ	• ↑ Insulin sensitivity	• No hypoglycaemia • Durability • ↑ HDL-C • ↓ Triacylglycerols (pioglitazone) • ? ↓ CVD events (PROactive,	• ↑ Weight • Oedema/heart failure • Bone fractures • ↑ LDL-C (rosiglitazone) • ? ↑ MI (meta-analysis, rosiglitazone)	Low
Insulins	• Rapid-acting analogues – Lispro – Aspart – Glulisine • Short-acting – Human Regular • Intermediate-acting – Human NPH • Basal insulin analogues – Glargine – Detemir – Degludec <sup>b</sup> • Pre-mixed	Activates insulin receptors	• ↑ Glucose disposal • ↓ Hepatic glucose production • Other	• Nearly universal response • Theoretically unlimited efficacy • ↓ Microvascular risk (UKPDS)	• Training requirements • Hypoglycaemia • Weight gain • ? Mitogenic effects • Injectable • Training requirements • Patient reluctance	Variable <sup>e</sup>

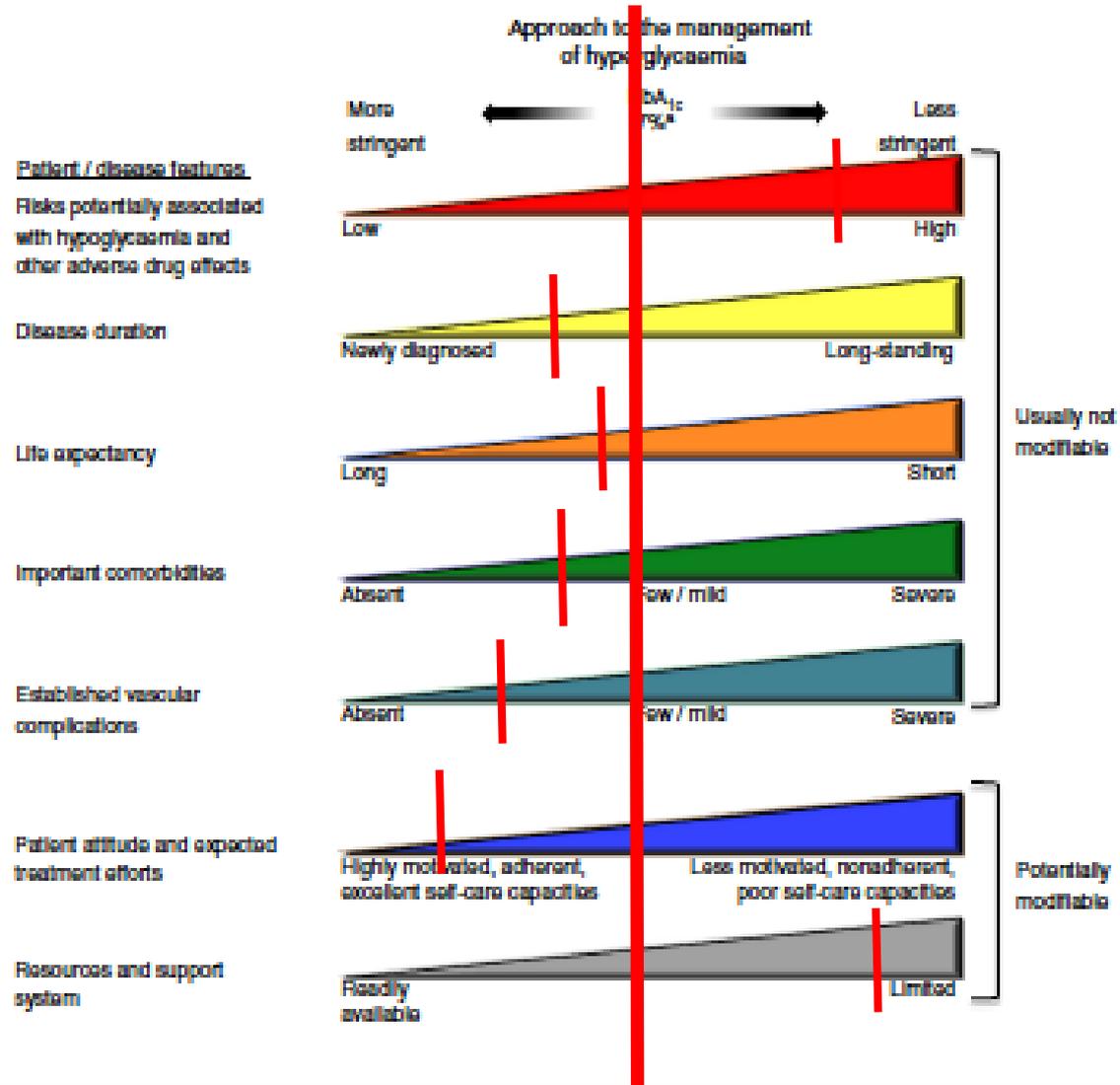
# 2015 Medikamente

DPP-4 inhibitors	<ul style="list-style-type: none"> <li>• Sitagliptin</li> <li>• Vildagliptin<sup>b</sup></li> <li>• Saxagliptin</li> <li>• Linagliptin</li> <li>• Alogliptin</li> </ul>	Inhibits DPP-4 activity, increasing postprandial active incretin (GLP-1, GIP) concentrations	<ul style="list-style-type: none"> <li>• ↑ Insulin secretion (glucose-dependent)</li> <li>• ↓ Glucagon secretion (glucose-dependent)</li> </ul>	<ul style="list-style-type: none"> <li>• No hypoglycaemia</li> <li>• Well tolerated</li> </ul>	<ul style="list-style-type: none"> <li>• Angioedema/urticaria and other immuno-mediated dermatological effects</li> <li>• ? Acute pancreatitis</li> <li>• ? ↑ Heart failure hospitalisations</li> <li>• ? Rheitis</li> </ul>	High
SGLT2 inhibitors	<ul style="list-style-type: none"> <li>• Canagliflozin</li> <li>• Dapagliflozin<sup>a</sup></li> <li>• Empagliflozin</li> </ul>	Inhibits SGLT2 in the proximal nephron	<ul style="list-style-type: none"> <li>• Blocks glucose reabsorption by the kidney, increasing glycosuria</li> </ul>	<ul style="list-style-type: none"> <li>• No hypoglycaemia</li> <li>• ↓ Weight</li> <li>• ↓ Blood pressure</li> <li>• Effective at all stages of T2DM</li> </ul>	<ul style="list-style-type: none"> <li>• Genitourinary infections</li> <li>• Polyuria</li> <li>• Volume depletion/hypotension/dizziness</li> <li>• ↑ LDL-C</li> <li>• ↑ Creatinine (transient)</li> </ul>	High
GLP-1 receptor agonists	<ul style="list-style-type: none"> <li>• Exenatide</li> <li>• Exenatide extended-release</li> <li>• Liraglutide</li> <li>• Albiglutide</li> <li>• Lixisenatide<sup>b</sup></li> <li>• Dulaglutide</li> </ul>	Activates GLP-1 receptors	<ul style="list-style-type: none"> <li>• ↑ Insulin secretion (glucose-dependent)</li> <li>• ↓ Glucagon secretion (glucose-dependent)</li> <li>• Slows gastric emptying</li> <li>• ↑ Satiety</li> </ul>	<ul style="list-style-type: none"> <li>• No hypoglycaemia</li> <li>• ↓ Weight</li> <li>• ↓ Postprandial glucose excursions</li> <li>• ↓ Some cardiovascular risk factors</li> </ul>	<ul style="list-style-type: none"> <li>• Gastrointestinal side effects (nausea/vomiting/diarrhoea)</li> <li>• ↑ Heart rate</li> <li>• ? Acute pancreatitis</li> <li>• C cell hyperplasia/medullary thyroid tumours in animals</li> <li>• Injectable</li> <li>• Training requirements</li> </ul>	High

# 2015 Behandlungsbaum ADA / EASD



# Zeit der individualisierten Medizin



# Key Messages 2015

- viele Patienten jetzt und noch mehr in Zukunft
- viele Medikamente
- viel Geld im Spiel
- jeder Patient ist individuell und hat sein eigenes HbA1c Ziel
- noch wenig Erfahrungen mit den neuen Medikamenten
- nicht nur HbA1c denken  
**aber alle kardio-vaskuläre Risiken aggressiv behandeln**

