3. Nationaler Workshop Diabetes-Versorgung

Diabetes, Insulin und Krebs

B. Häussler, S. Behrendt, S. Klein, A. Höer

IGES Institut

Berlin, 30. November 2011

IGES Institut GmbH · www.iges.de
Friedrichstraße 180 · 10117 Berlin · Germany
☎ +49 30 230 80 90 · 🖷 +49 30 230 80 911

Diabetes

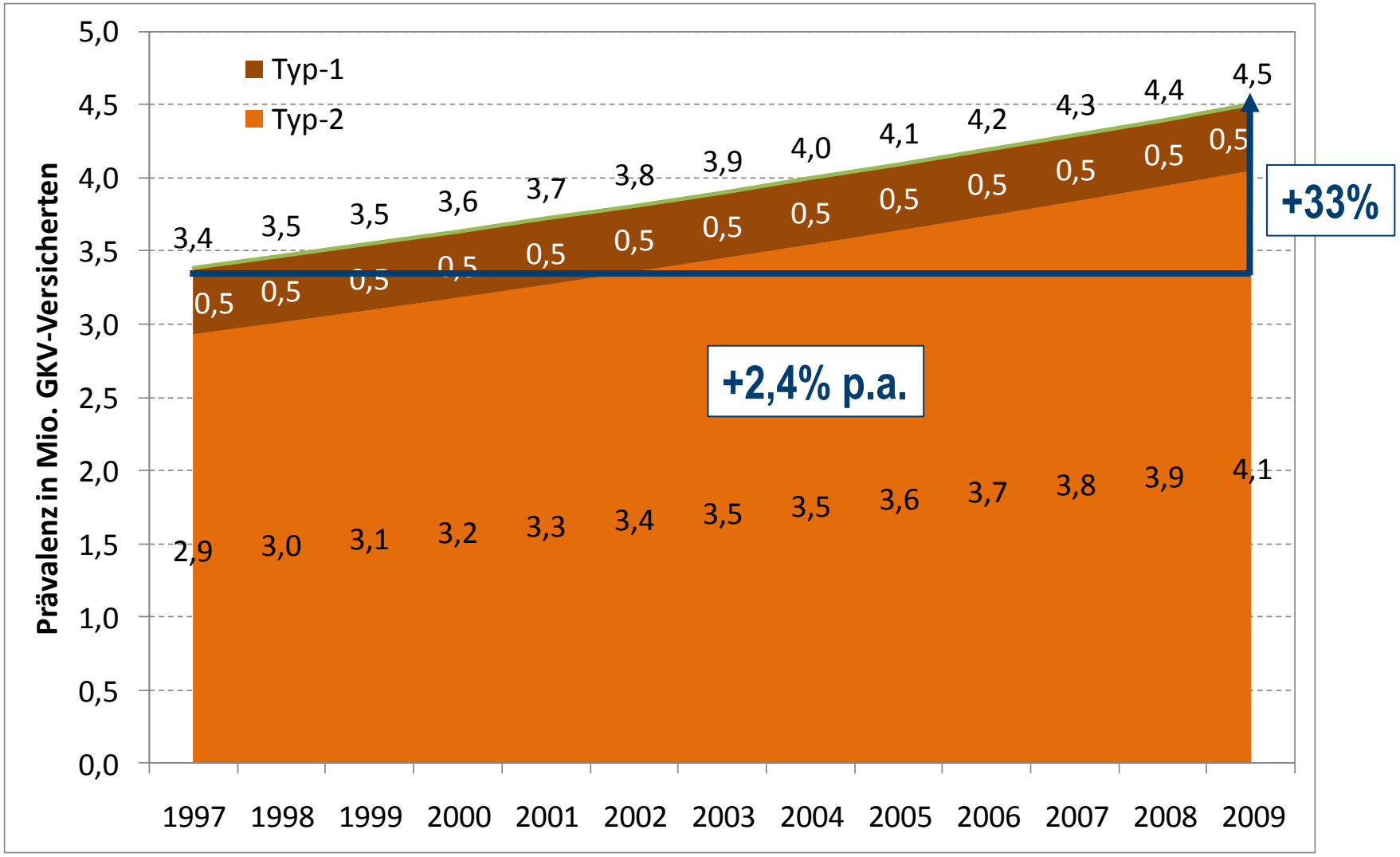
Insulin

Krebs

... was fangen wir damit an?

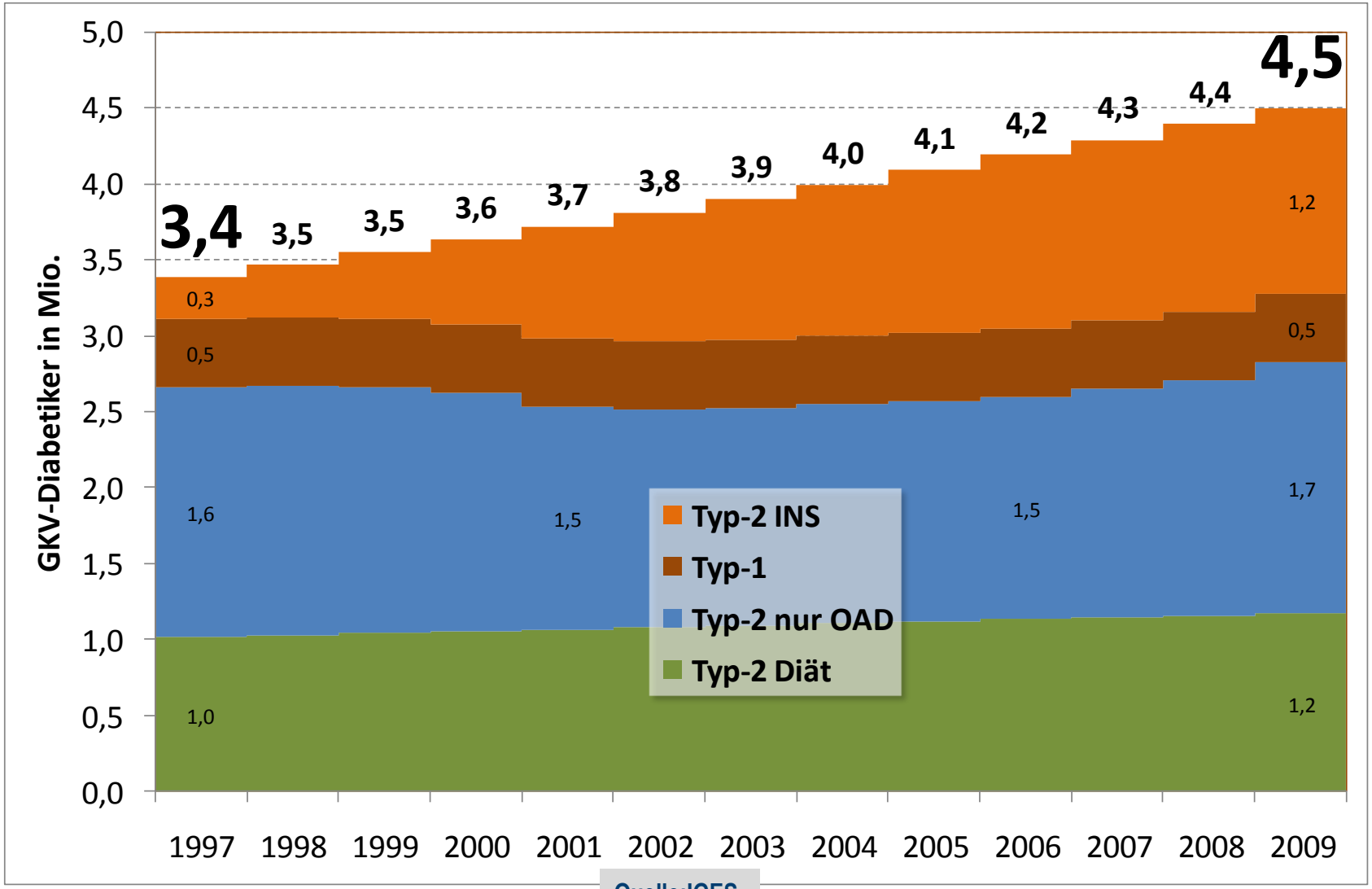
Diabetes

Die Zahl der Diabetiker in der GKV nimmt im Zeitraum um 1/3 zu, im Durchschnitt um 2,4% p.a.



Quelle: Weißbuch Diabetes, IGES-Annahmen

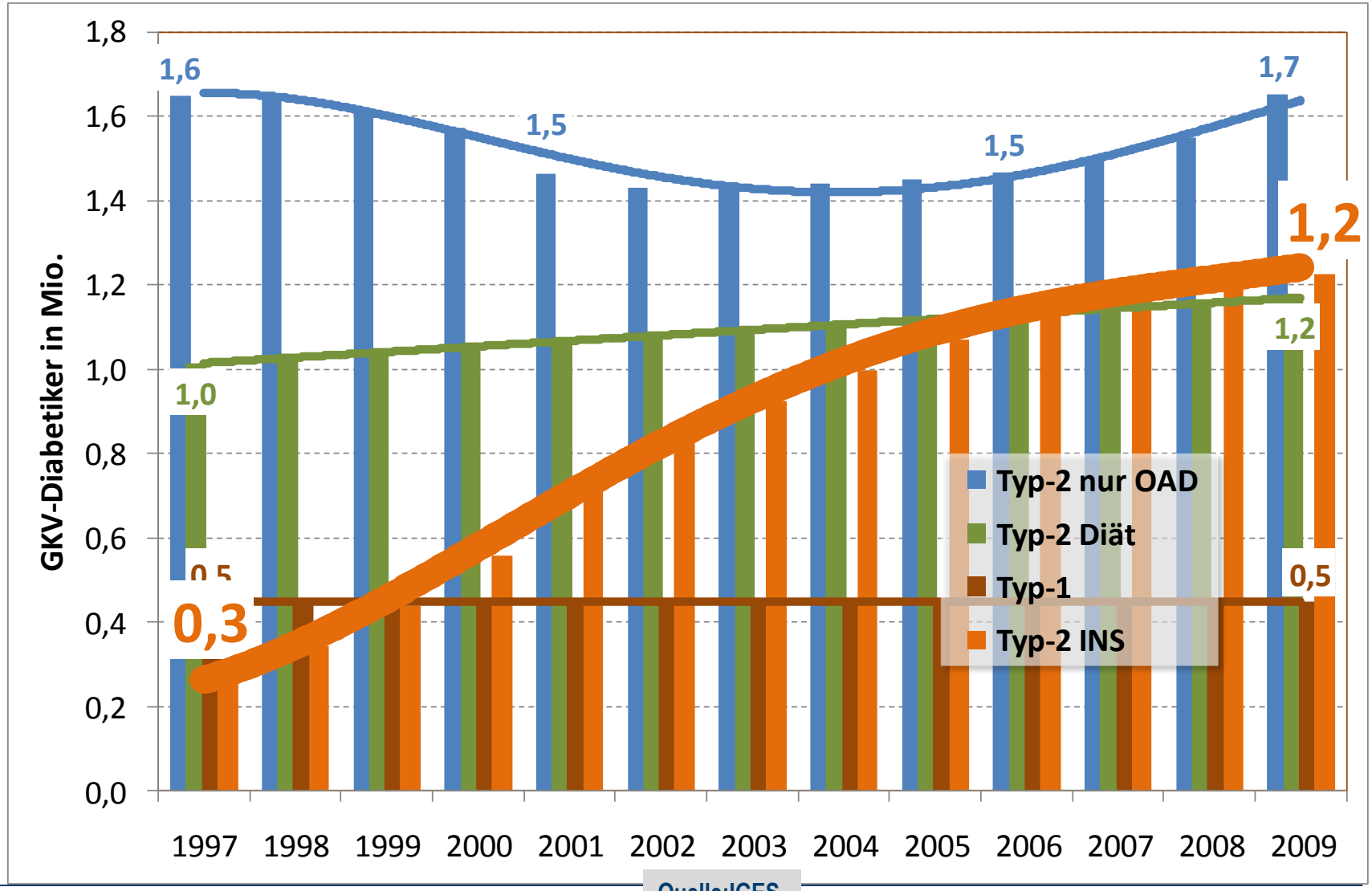
Das Segment der T2D in der GKV, die mit Insulin behandelt werden, nimmt am stärksten zu.



Quelle:IGES

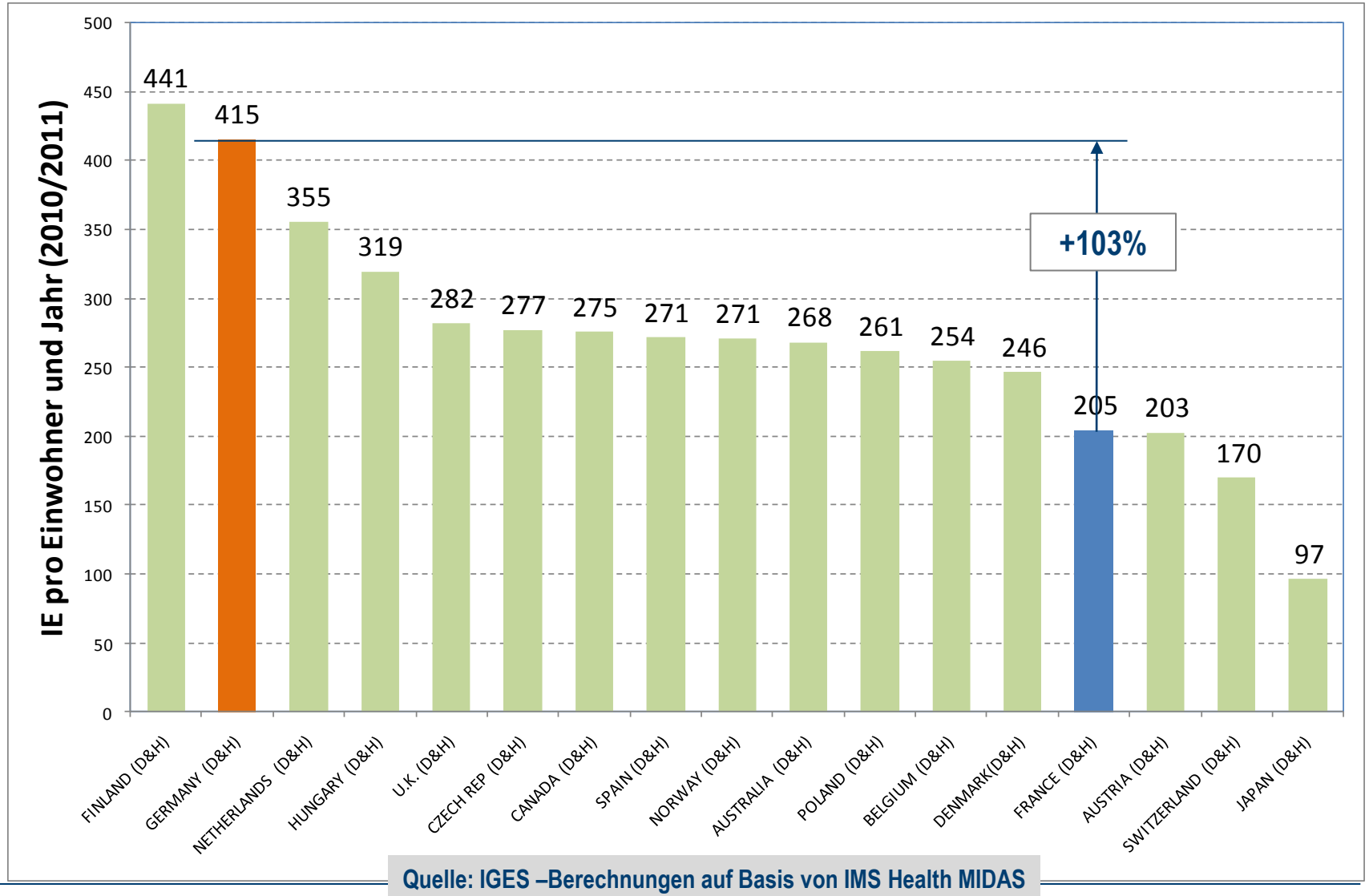
Insulin

Mit Insulin versorgte T2D nehmen von 270.000 auf 1.220.000 zu (4,5fach, 13,4% Steigerung p.a.)



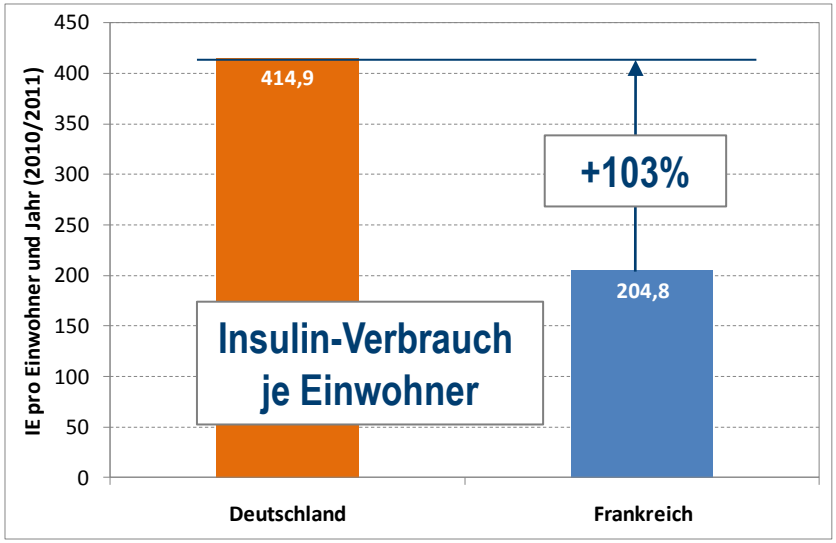
Quelle:IGES

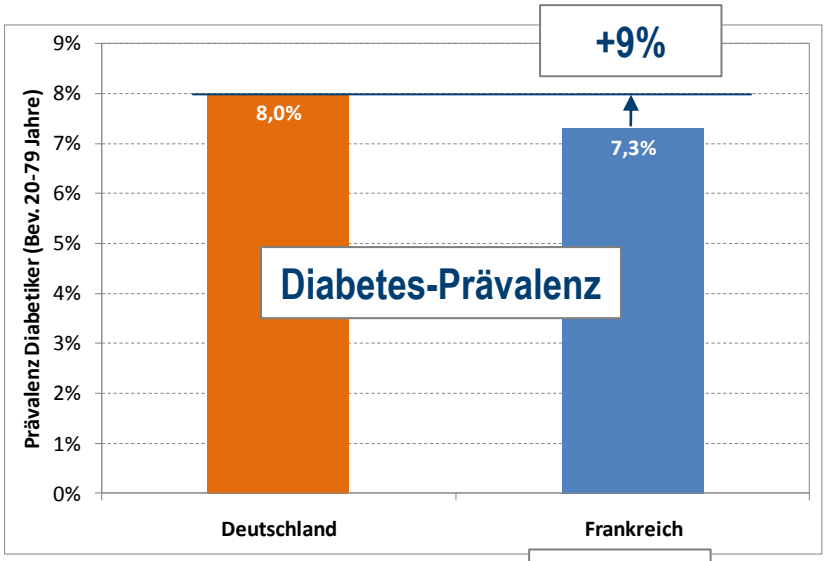
Der Insulinverbrauch (pro Einwohner) ist in Deutschland hoch

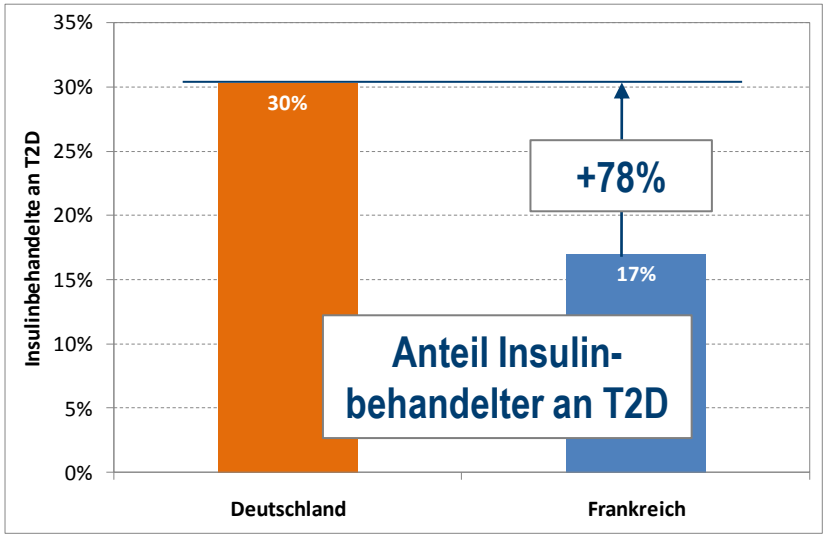


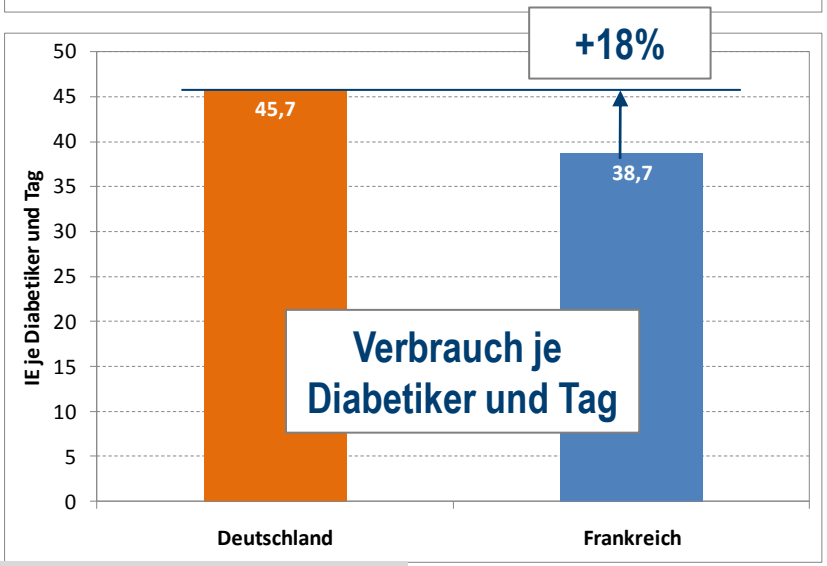
Quelle: IGES –Berechnungen auf Basis von IMS Health MIDAS und OECD Health Data

Insulinverbrauch in Deutschland und Frankreich im Vergleich



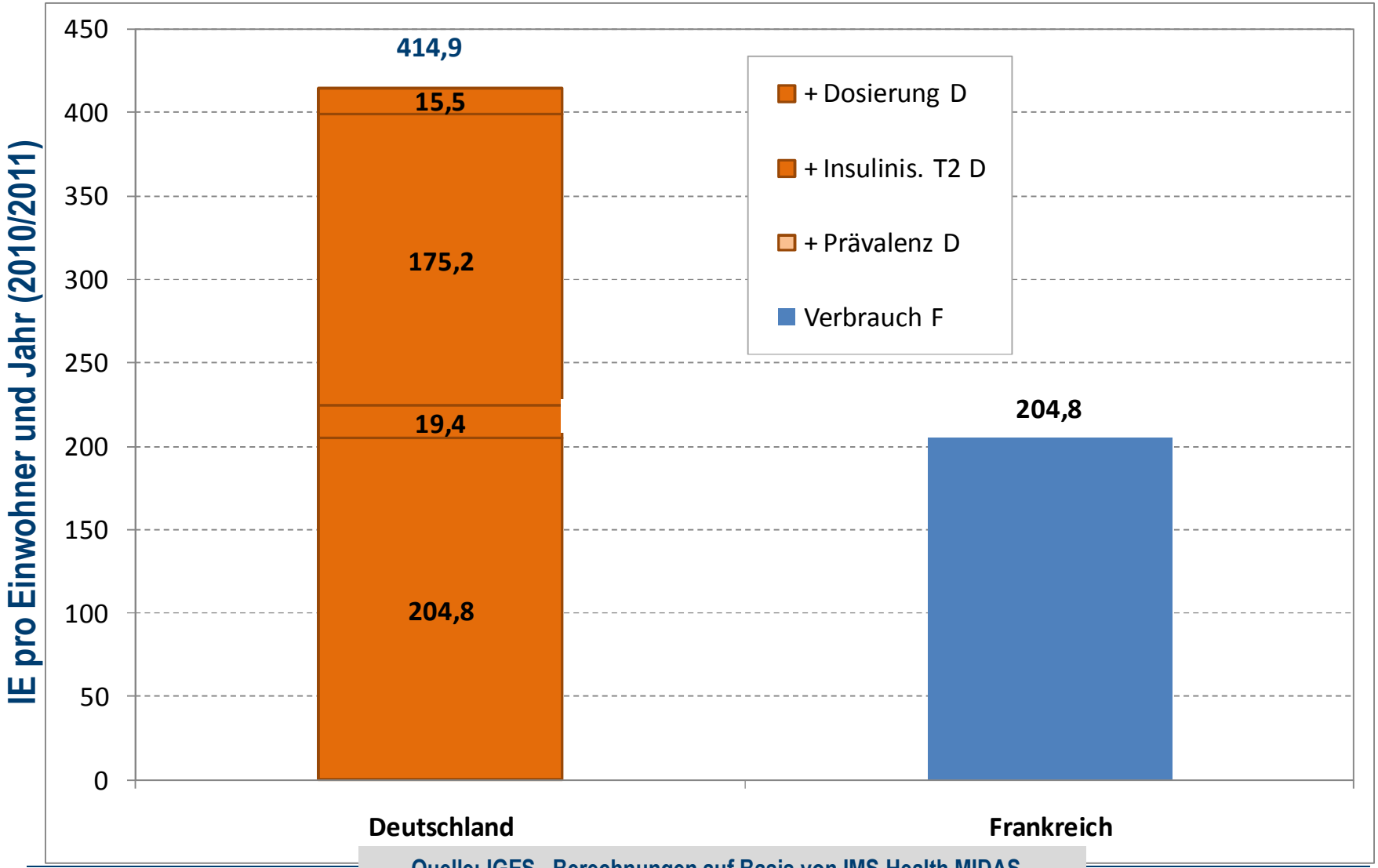






Quelle: IGES –Berechnungen auf Basis von IMS Health MIDAS, INSIGHT Health, OECD Health Data, HAS und Int'l Diabetes Foundation

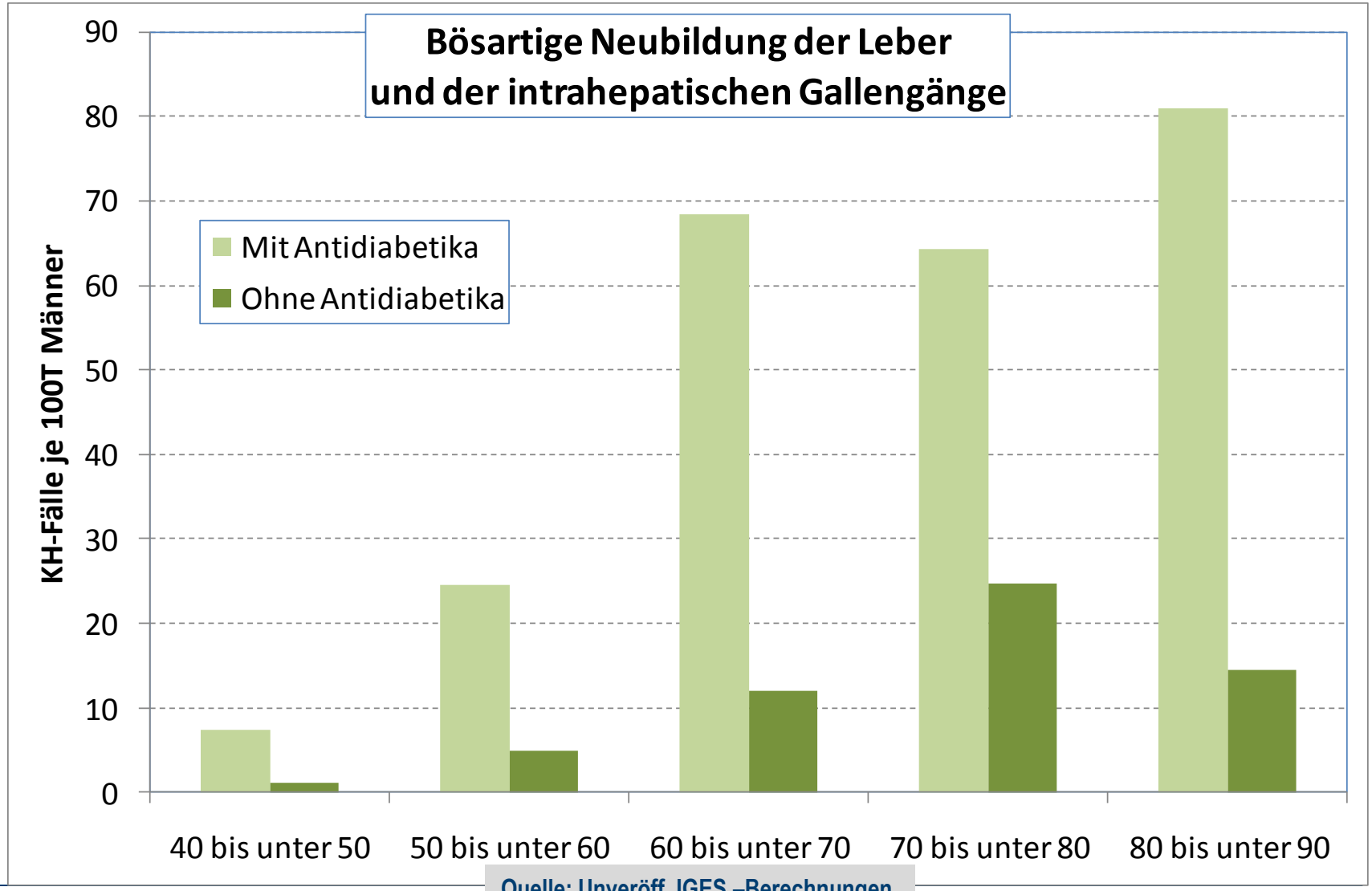
Modellierung der Komponenten, die zu einem erhöhten Insulinverbrauch in Deutschland führen



Quelle: IGES –Berechnungen auf Basis von IMS Health MIDAS, INSIGHT Health, OECD Health Data, HAS und Int'l Diabetes Foundation

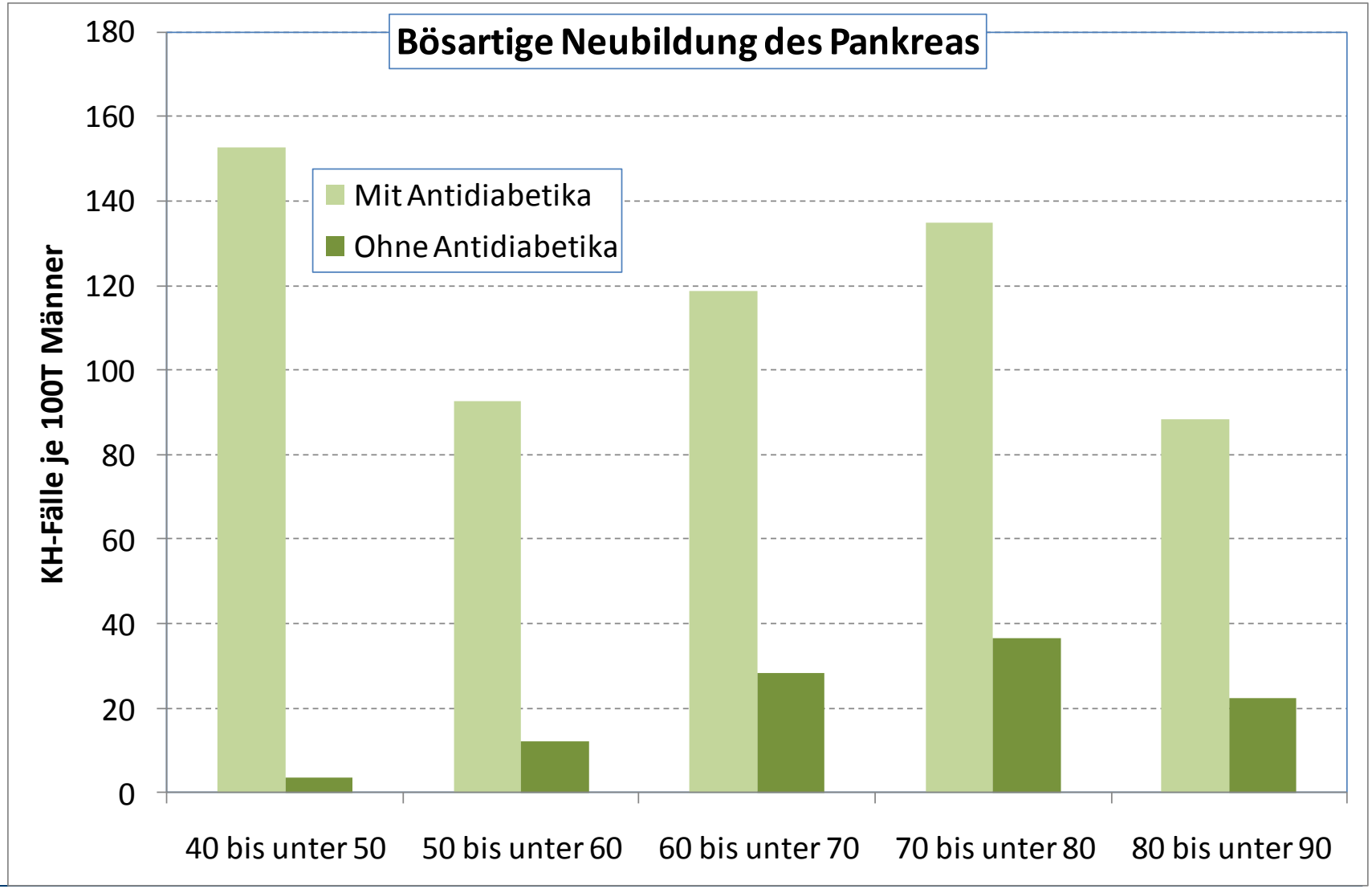
Krebs

Erste Anhaltspunkte in IGES-interner Studie von 2001 (I)

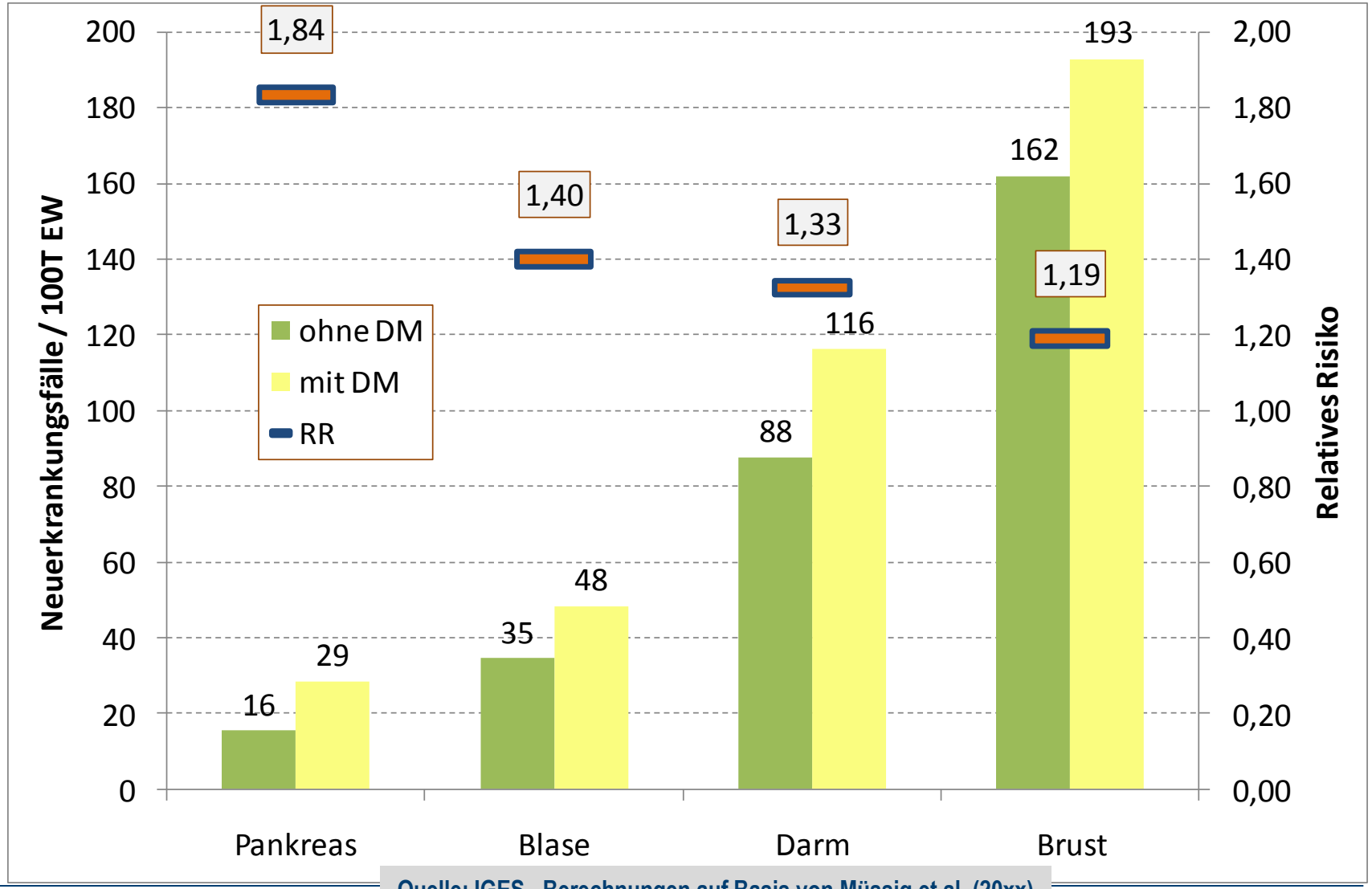


Quelle: Unveröff. IGES –Berechnungen auf Basis von Daten einer Krankenkass

Erste Anhaltspunkte in IGES-interner Studie von 2001 (II)

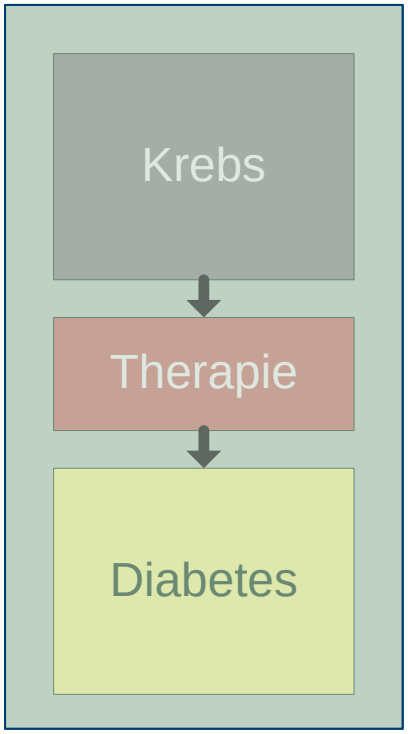


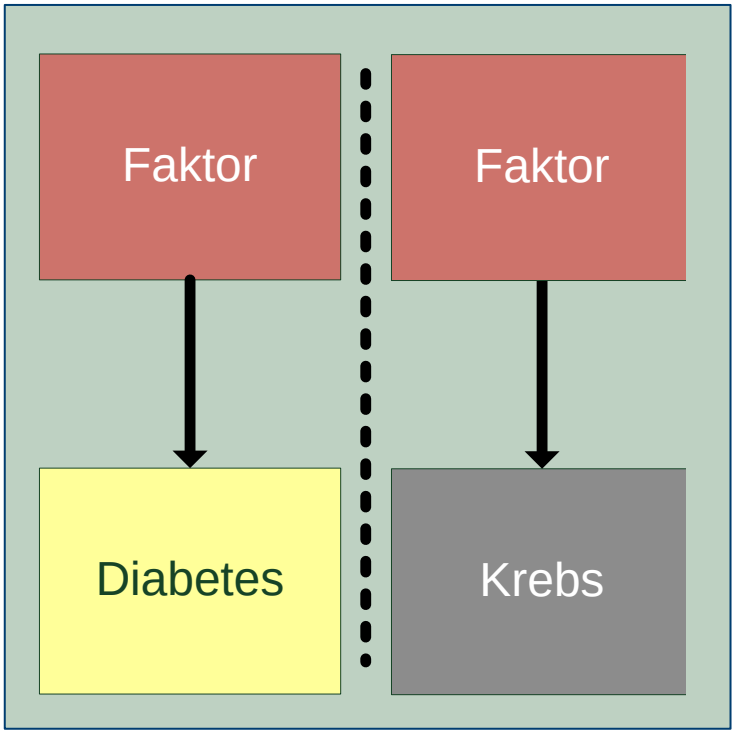
Ergebnisse aus epidemiologischen Studien: Bei Diabetikern kommt Krebs häufiger vor

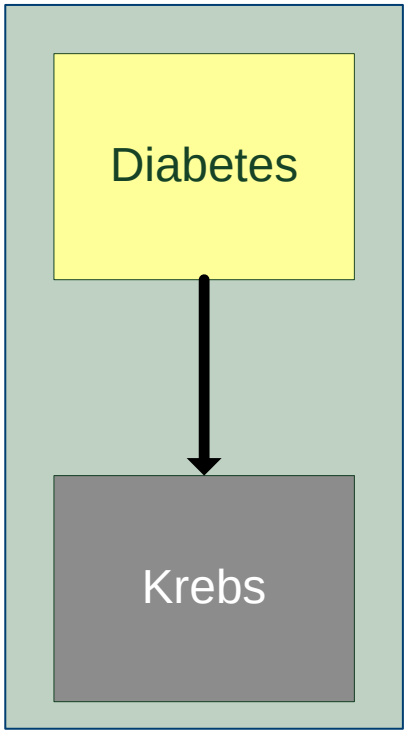


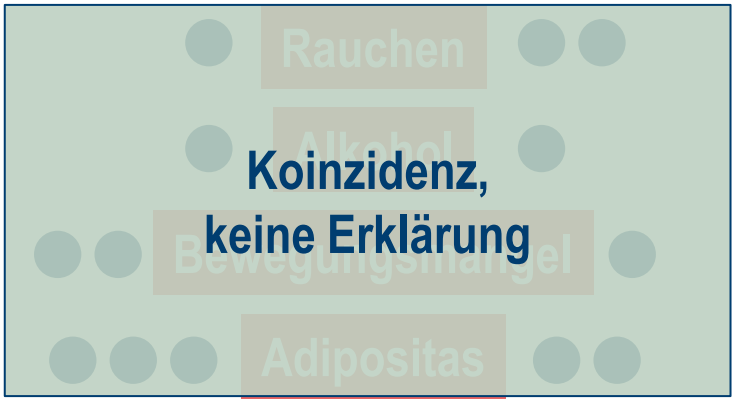
Quelle: IGES –Berechnungen auf Basis von Müssig et al. (20xx)

Woran liegt das vermutlich? (I)









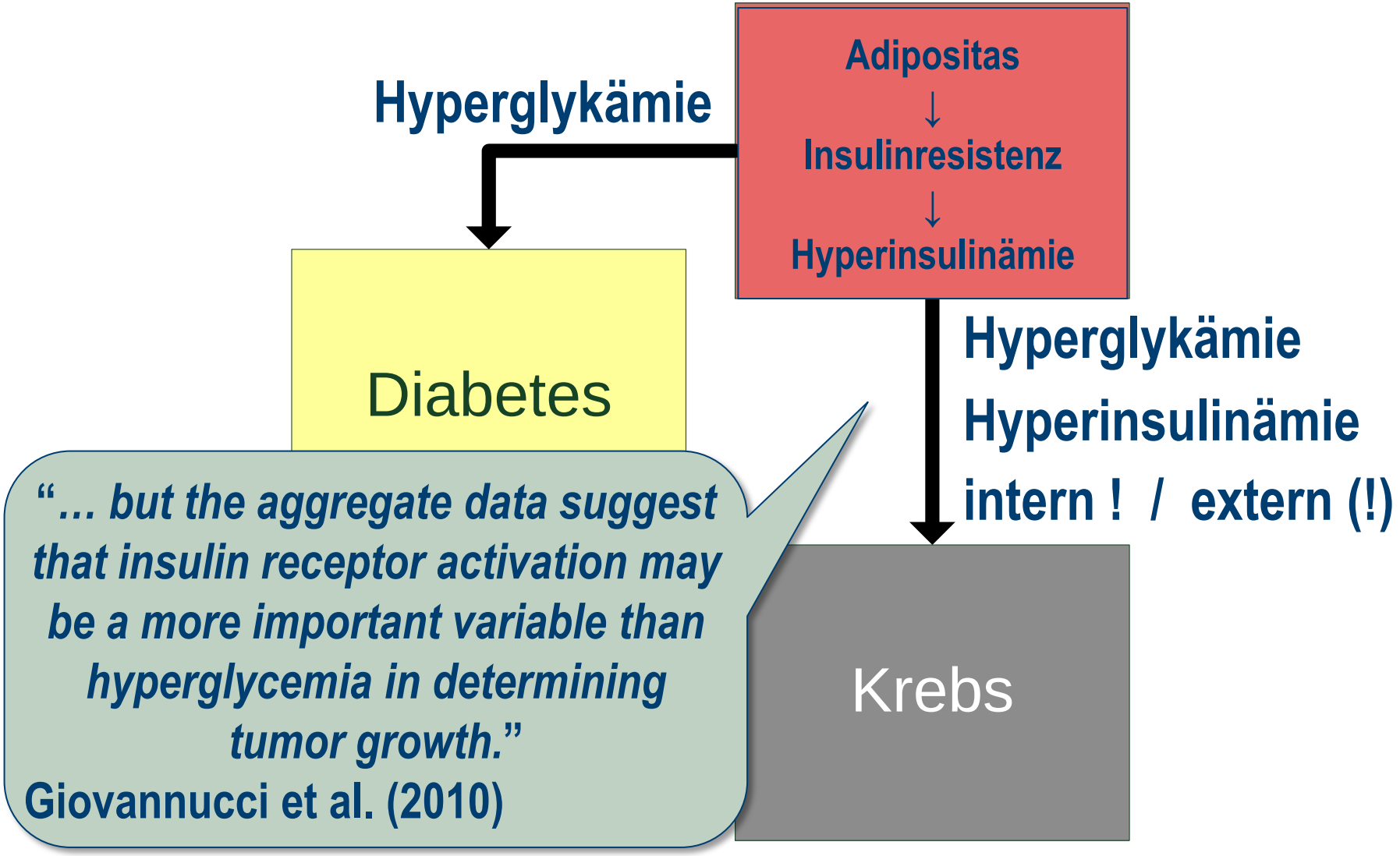
Koinzidenz, keine Erklärung

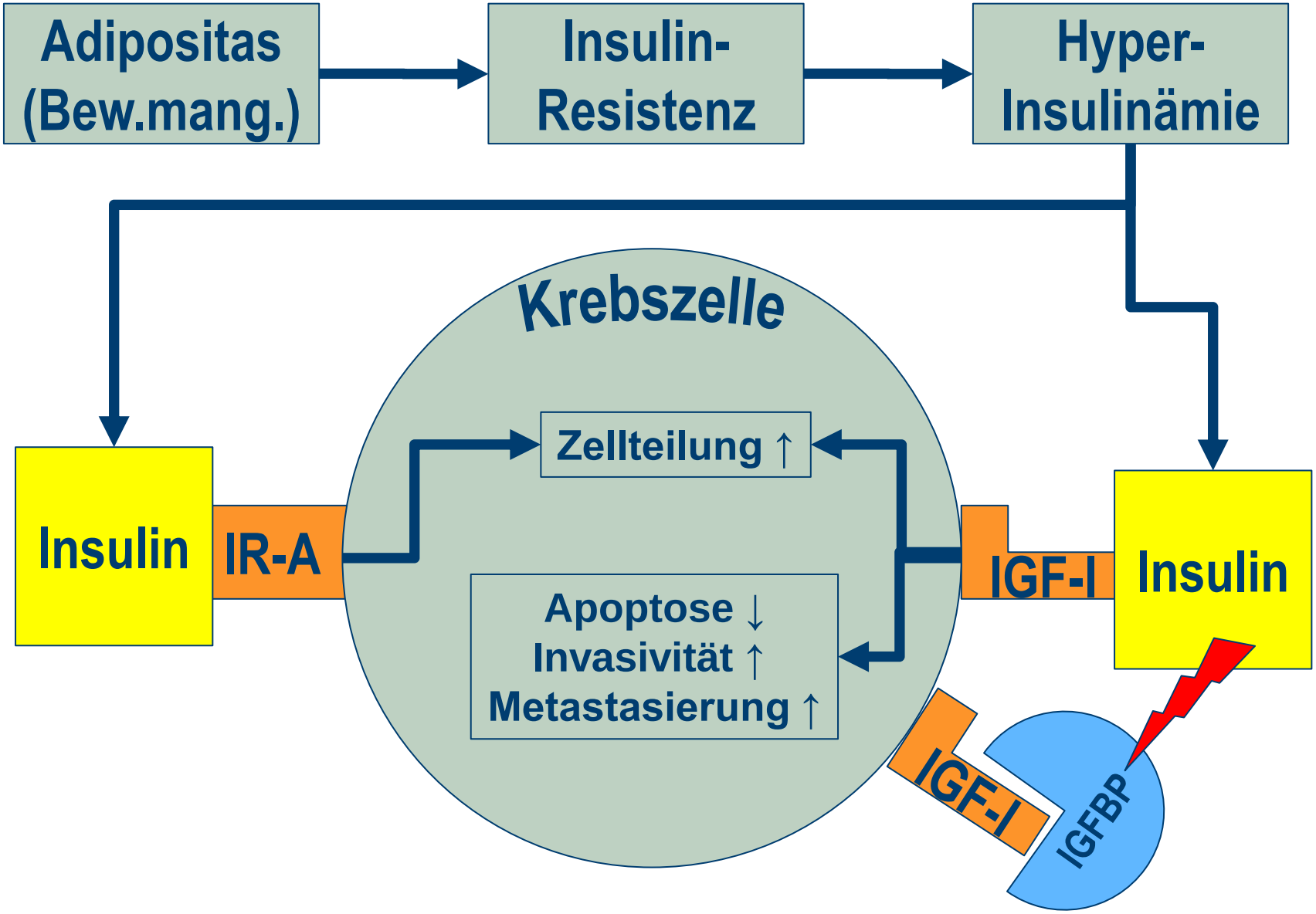
Hyperglykämie ?

Krebsrisiko wird durch verbesserte BZ-Einstellung nicht reduziert (außer durch Metformin)

Johnson & Pollak (2010)

Woran liegt das vermutlich? (II)




Adipositas (Bew.mang.)
Insulin-Resistenz
Hyper-Insulinämie
Krebszelle
Zellteilung ↑
Apoptose ↓
Invasivität ↑
Metastasierung ↑
Insulin
IR-A
IGF-I
Insulin
IGF-I
IGFBP

Hinweise auf Krebsinduktion durch Antidiabetika ?

- **Insulin glargin**

  derzeit kein belastbarer Hinweis auf erhöhtes Risiko gegenüber Human-Insulin

- **Insulin generell**

  Hinweise auf erhöhtes Risiko geg. Metformin

- **Sulfonylharnstoffe**

  Hinweise auf erhöhtes Risiko geg. Metformin

- **Metformin**

  Hinweise auf vermindertes Risiko gegenüber Insulin generell

… was fangen wir damit an?

Diabetes (primarily type 2) is associated with an **increased risk** of some cancers (liver, pancreas, endometrium, colon/rectum, breast, and bladder). Diabetes is associated with a reduced risk of prostate cancer. For some other cancer sites, there appears to be no association or the evidence is inconclusive.

The association between diabetes and some cancers may be due in part to **shared risk factors** between the 2 diseases such as aging, obesity, diet, and physical inactivity.

Possible mechanisms for a direct link between diabetes and cancer include **hyperinsulinemia**, **hyperglycemia**, and **inflammation**.

Healthful **diet**, physical **activity**, and **weight management** reduce the risk and improve outcomes of type 2 diabetes and some forms of cancer and should be promoted for all.

Patients with diabetes should be strongly encouraged by their health care professionals to undergo appropriate **cancer screenings** as recommended for all people of their age and sex.

The evidence for specific drugs affecting cancer risk is limited, and observed associations may have been confounded by indications for specific drugs, effects on other cancer risk factors such as body weight and hyperinsulinemia, and the complex progressive nature of hyperglycemia and pharmacotherapy in type 2 diabetes.

Although still limited, early evidence suggests that **metformin** is associated with a **lower** risk of cancer and that **exogenous insulin** is associated with an **increased** cancer risk. Further research is needed to clarify these issues and evaluate if insulin **glargine** is more strongly associated with cancer risk compared with other insulins.

Cancer risk should **not be a major factor** when choosing between available diabetes therapies for the **average patient**. For selected patients with a very high risk of cancer occurrence (or for recurrence of specific cancer types), these issues may require more careful consideration.

Many research questions remain.

Giovannucci et al. (2010)

Fazit

- **Diabetologische und onkologische Fachgesellschaften führen die fachliche Debatte.**
  - Insulinisierung als prominente Strategie zur Behandlung von Typ-2-Patienten einbeziehen.
- **Weitere Forschung dringend erforderlich.**

www.iges.de