

Insulinpumpentherapie bei Kindern und Jugendlichen - aktueller Überblick

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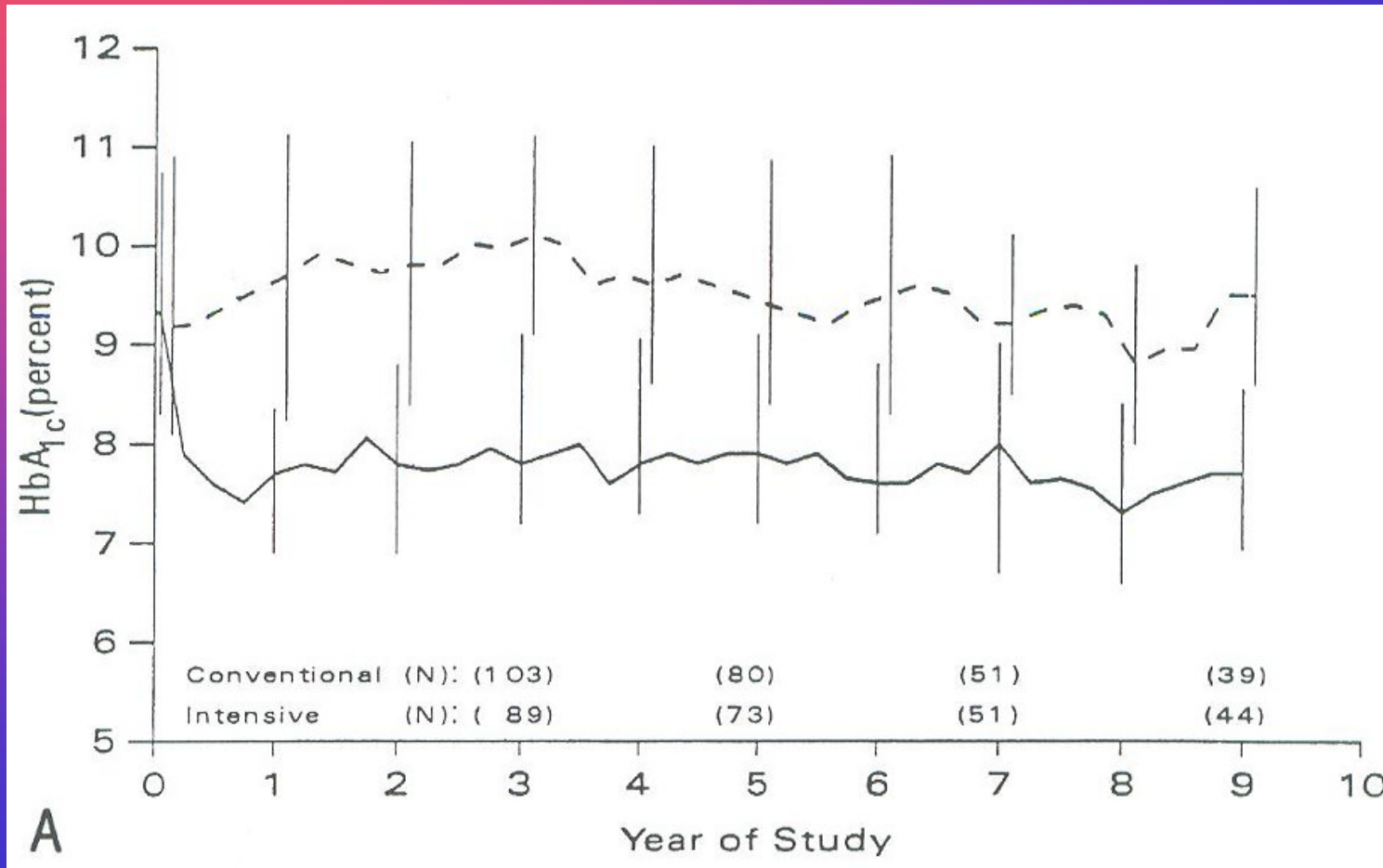
Herz- und Diabeteszentrum
Nordrhein-Westfalen

Universitätsklinik der Ruhr-Universität Bochum

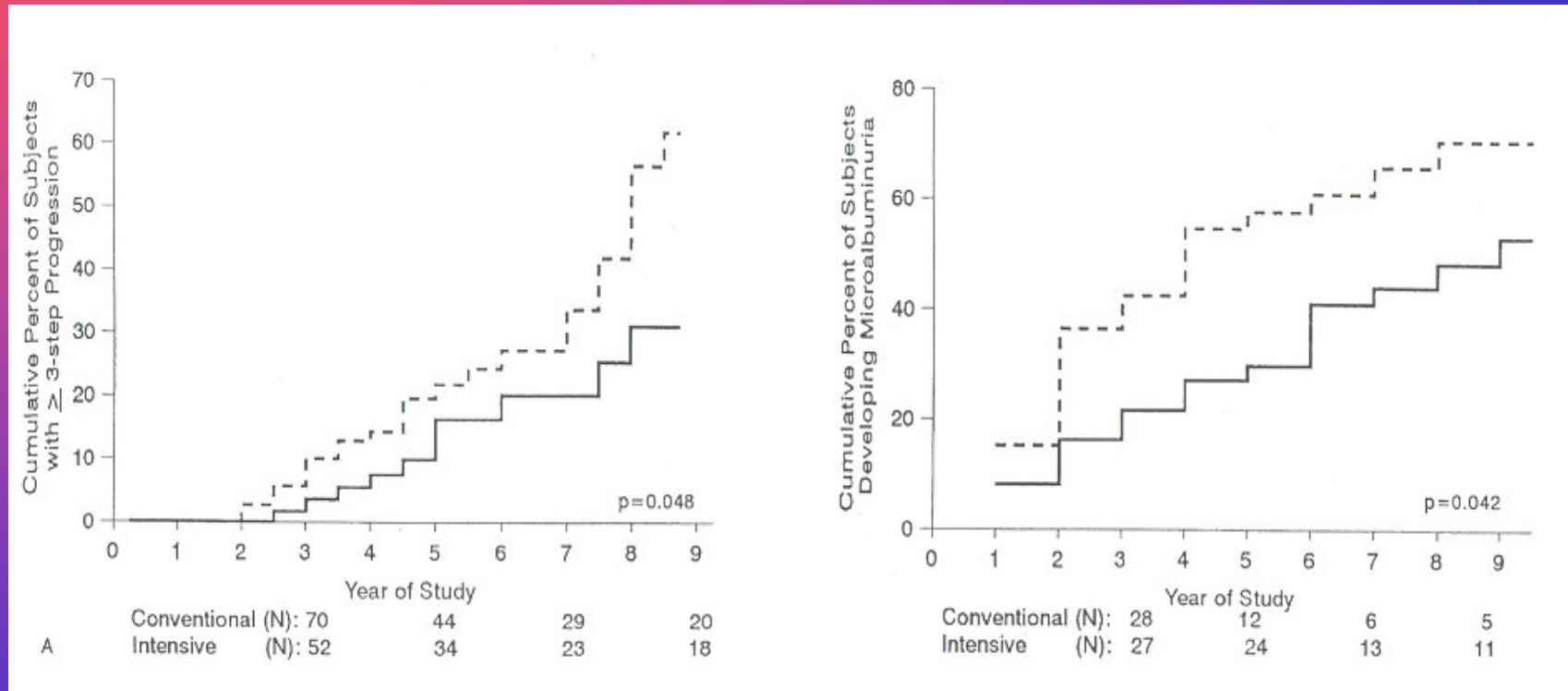
Therapieziele

- Normale Entwicklung:
körperlich, geistig, psychisch, sozial
- Gute Stoffwechseleinstellung
- Vermeidung akuter Komplikationen
(schwere Hypoglykämie / Ketoazidose)
- Vermeidung chronischer Komplikationen
(mikro- und makrovaskuläre Folgeschäden)

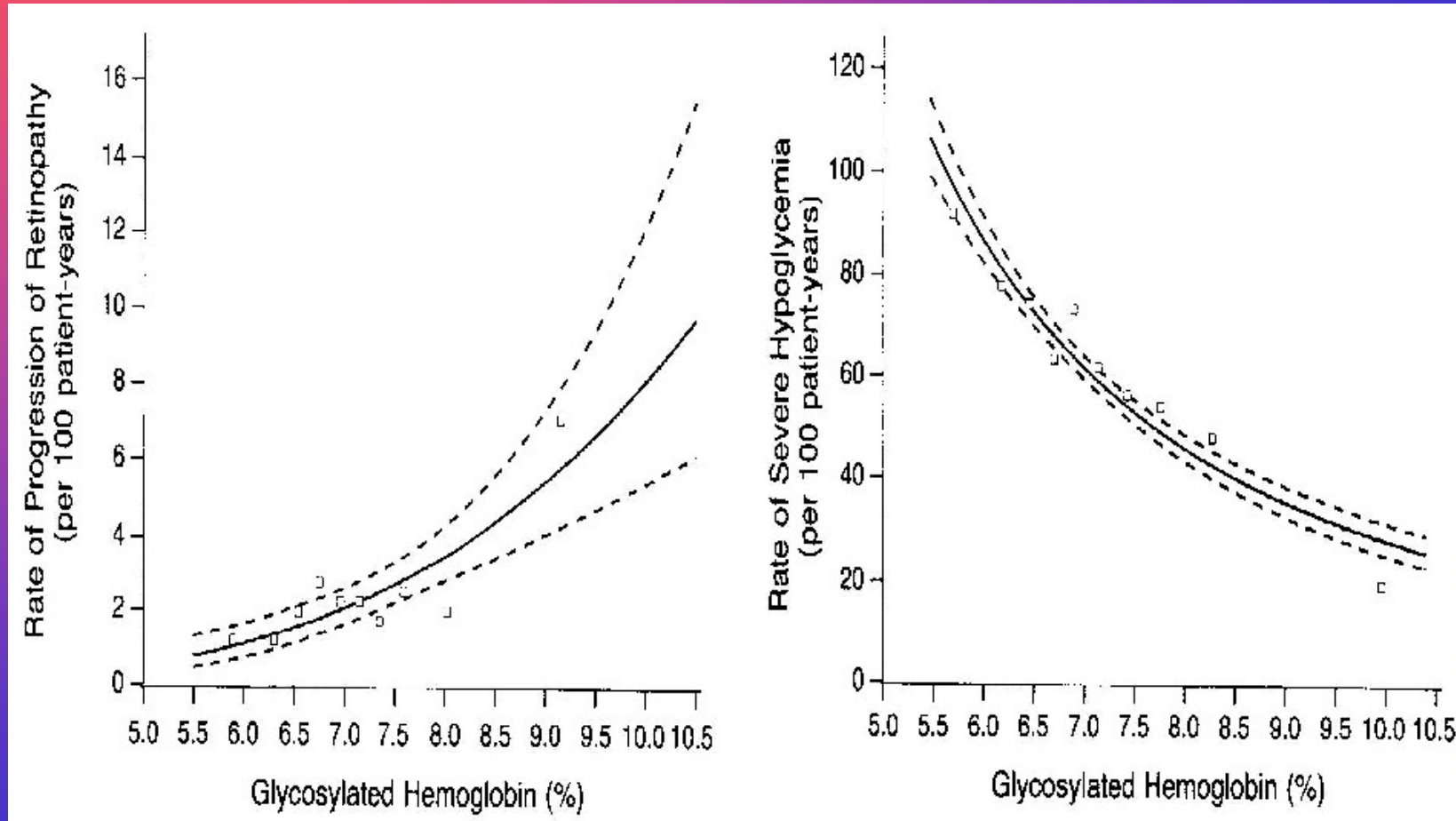
Ergebnisse der DCCT (adolescents)



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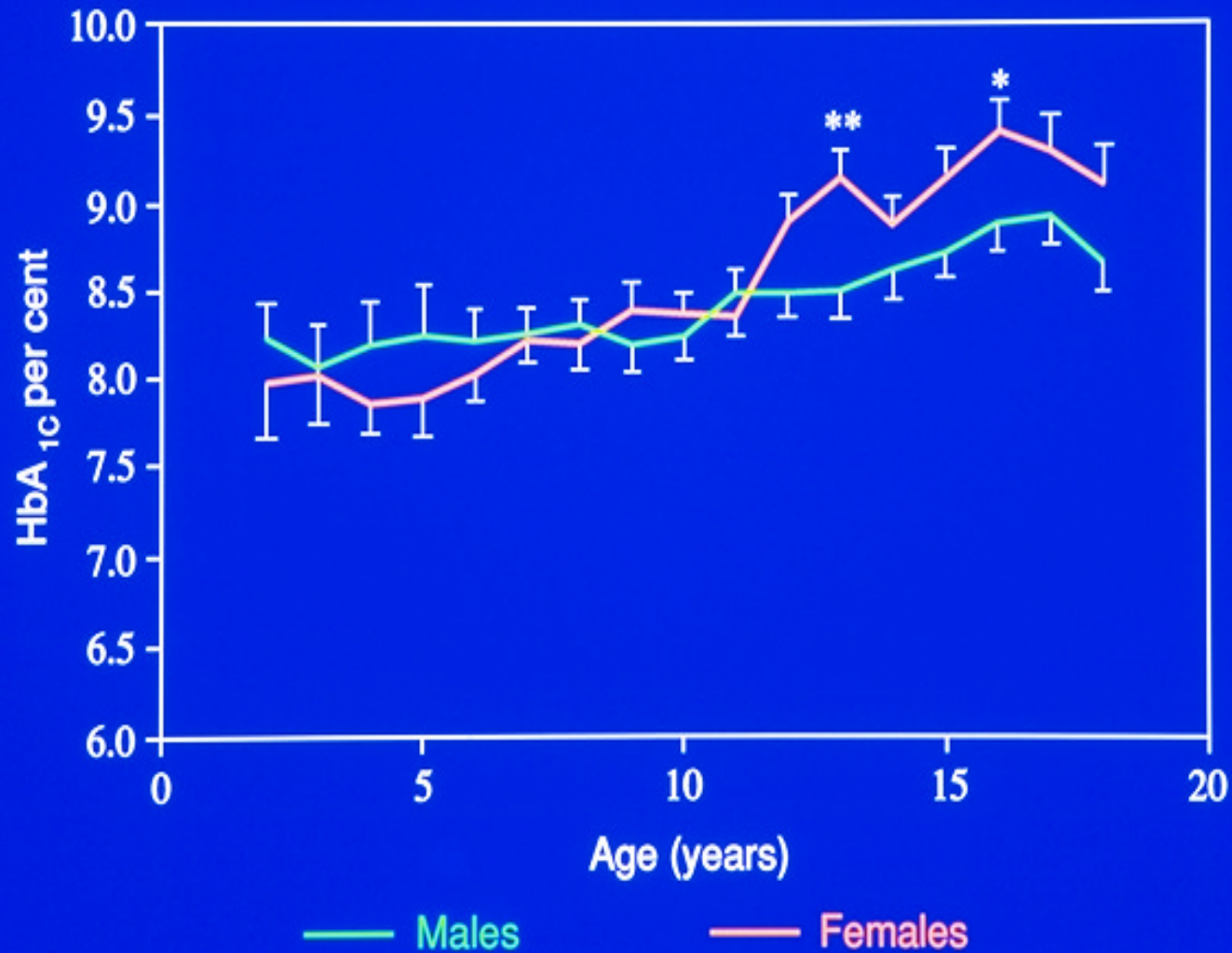


Ergebnisse der DCCT

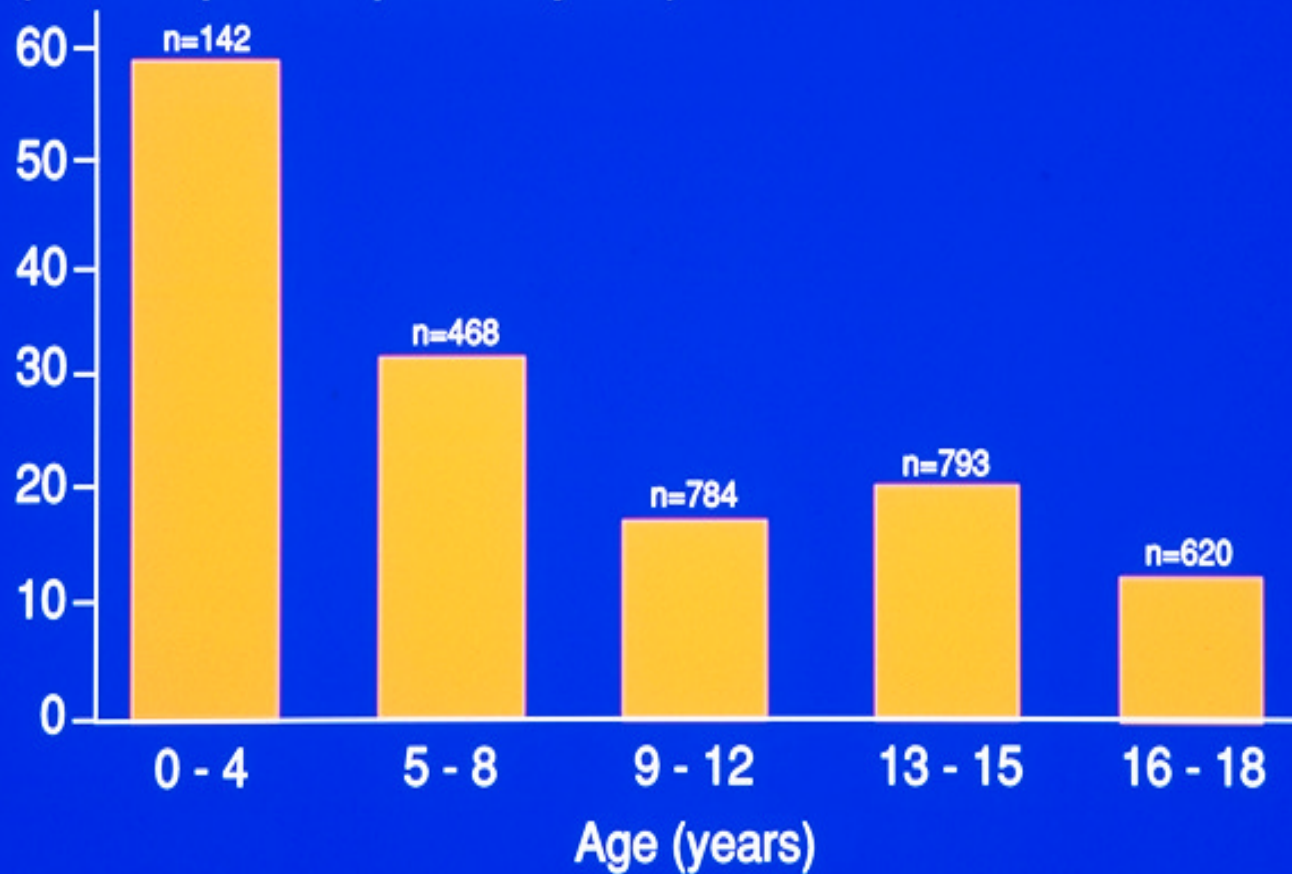


DCCT Research Group, N Engl J Med, 1993

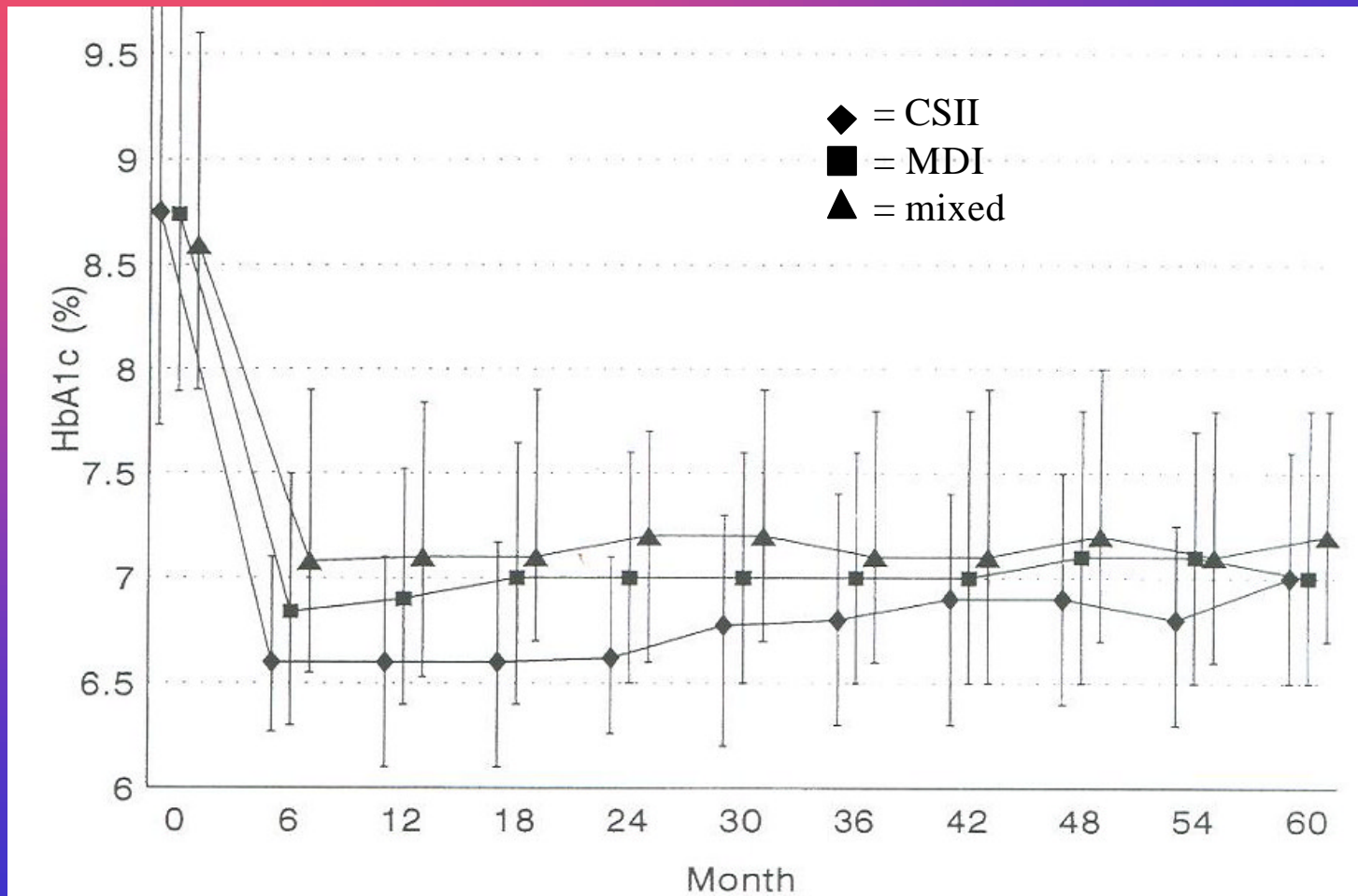
International survey of childhood diabetes Average curves (1 SE)



Incidence of hypoglycemia
(number per 100 patients-years)



DCCT: unterschiedlich intensiv



ICT mit NPH vs. CSII

Table 2 - Clinical and metabolic parameters in 24 Type 1 diabetic patients (CSII group) during treatment with MDI with NPH and during CSII.

	MDI with NPH	CSII	<i>p</i>
BMI (kg/m ²)*	23.5±3.7	23.9±3.9	NS
HbA _{1c} (%)*	9.0±1.3	8.0±1.0	<0.001
MAGE (mg/dl)	119.8±67.3	60.7±26.6	<0.001
Cholesterol (mg/dl)*	207.3±28.5	198.5±32.2	NS
HDL-cholesterol (mg/dl)*	68.3±15.1	65.3±13	NS
Triglycerides (mg/dl)*	92.8±36.7	77±32.7	<0.05
Uric acid (mg/dl)*	4.0±1.3	4.0±1.2	NS
Insulin requirement (U/day)*	48±11.7	35.9±8.5	<0.001
Severe hypoglycaemic episodes (per patient/yr)	0.42±0.49	0.17±0.37	<0.05

*Mean±SD of four measures during 1-yr treatment. BMI: body mass index; MDI: multiple daily insulin injection; CSII: continuous s.c. insulin infusion; MAGE: mean amplitude of glycaemic excursion.

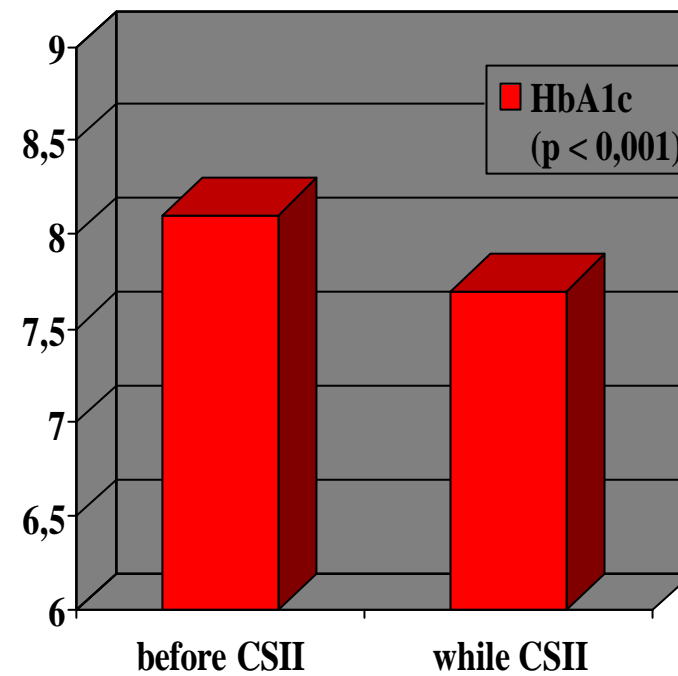
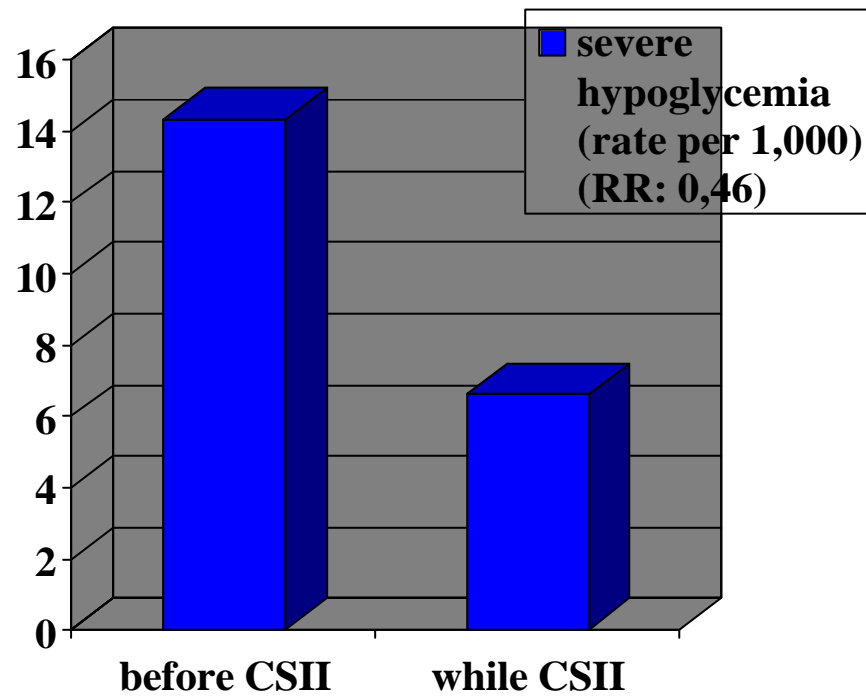
ICT mit Glargin vs. CSII

Table 4 - Differences between measured variables before and after active treatment in the CSII group and in the glargine group.

	CSII group (n=4)	Glargine group (n=24)	p
BMI (kg/m ²)	0.4±0.7	0.1±0.4	NS
HbA _{1c} (%)	-1.0±0.8	-0.7±0.6	NS
MAGE (mg/dl)	-59.1±25.3	-28.9±15.7	<0.001
Cholesterol (mg/dl)	-8.8±20.2	-2.5±24	NS
HDL-cholesterol (mg/dl)	-3±8.9	-1.4±8	NS
Triglycerides (mg/dl)	-15.8±36.7	-7.5±22.7	NS
Insulin requirement (U/day)	-12.1±6	-0.8±0.3	<0.001
Severe hypoglycaemic episodes (per patient/yr)	-0.25±0.52	-0.25±0.59	NS

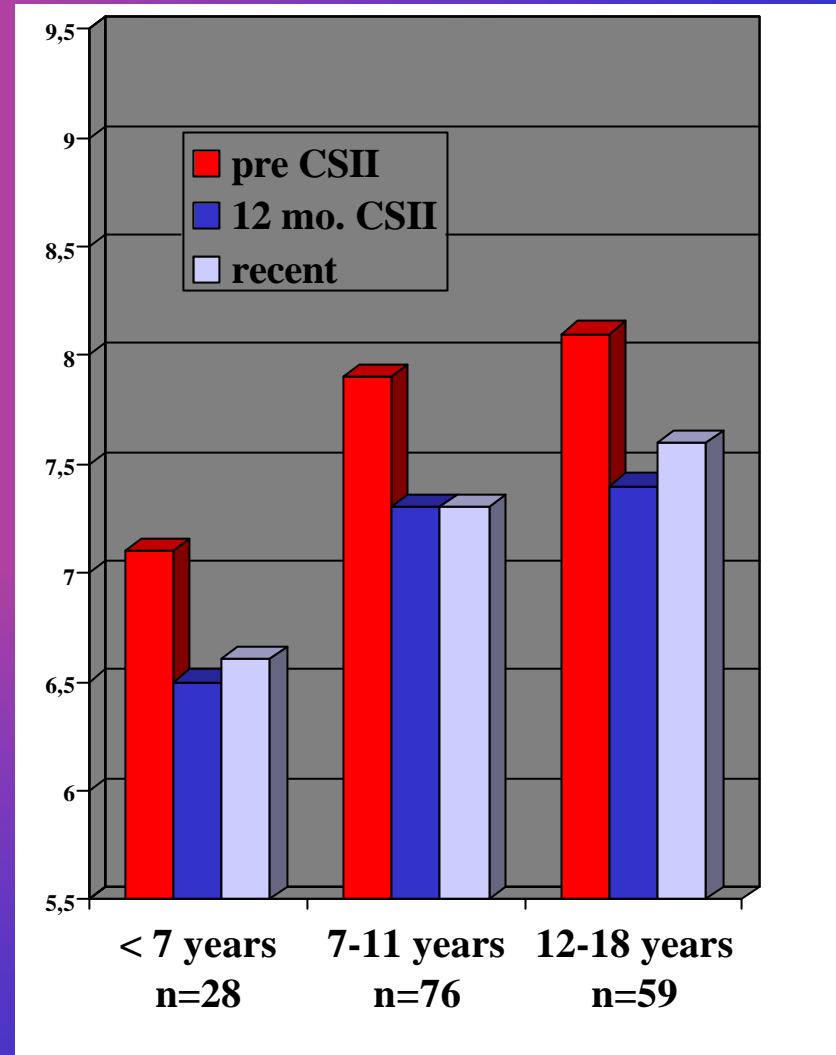
BMI: body mass index; CSII: continuous s.c. insulin infusion; MAGE: mean amplitude of glycaemic excursion.

Wechsel von ICT zu CSII



CSII bei Kindern und Jugendlichen

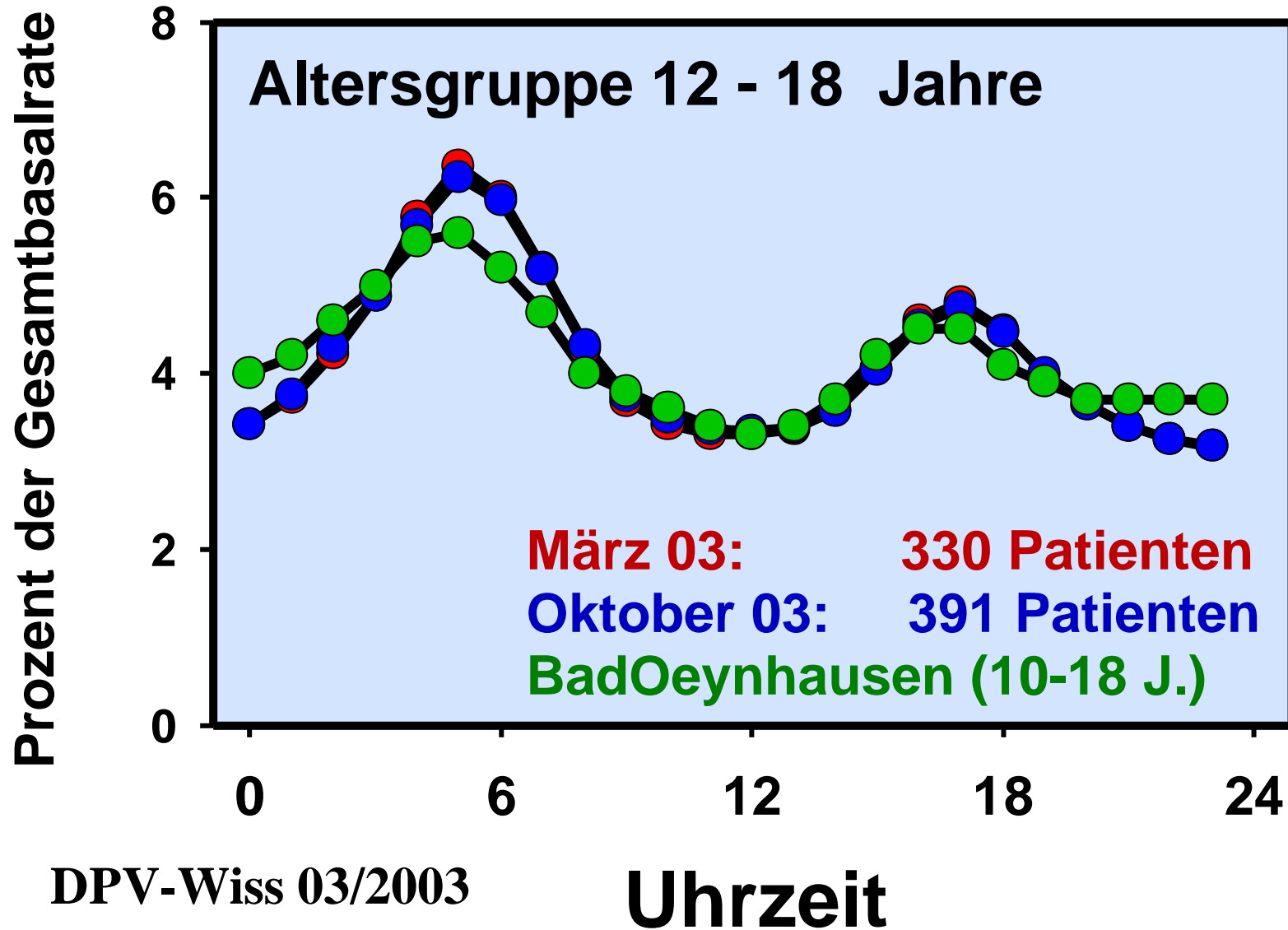
Frequency of severe hypoglycemia		
	pre CSII	12 mo. CSII
< 7 y.	11 (0,42)	5 (0,19)
7-11 y.	25 (0,33)	17 (0,22)
12-18 y.	20 (0,33)	16 (0,27)
Total	56 (0,35)	38 (0,24)



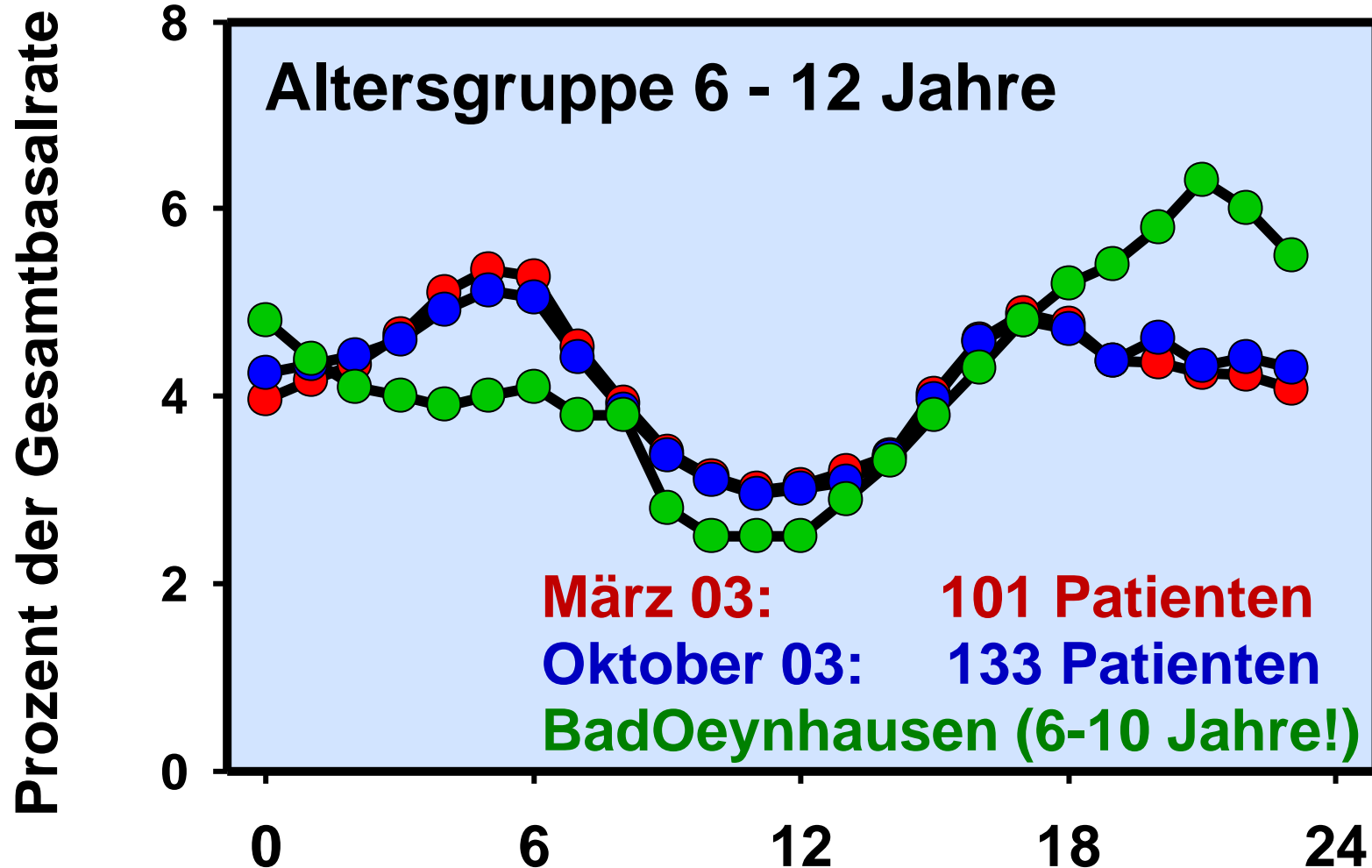
Mögliche Indikationen DPV-Auswahlliste

- Dawn-Phänomen
- Hypoglykämie
- Hyperglykämie
- Flexibilität
- Motivation
- Schwangerschaft
- Ultima Ratio / anderer Grund
- **Kleinkind**

Basalrate Insulinpumpe



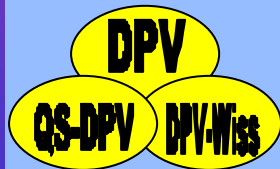
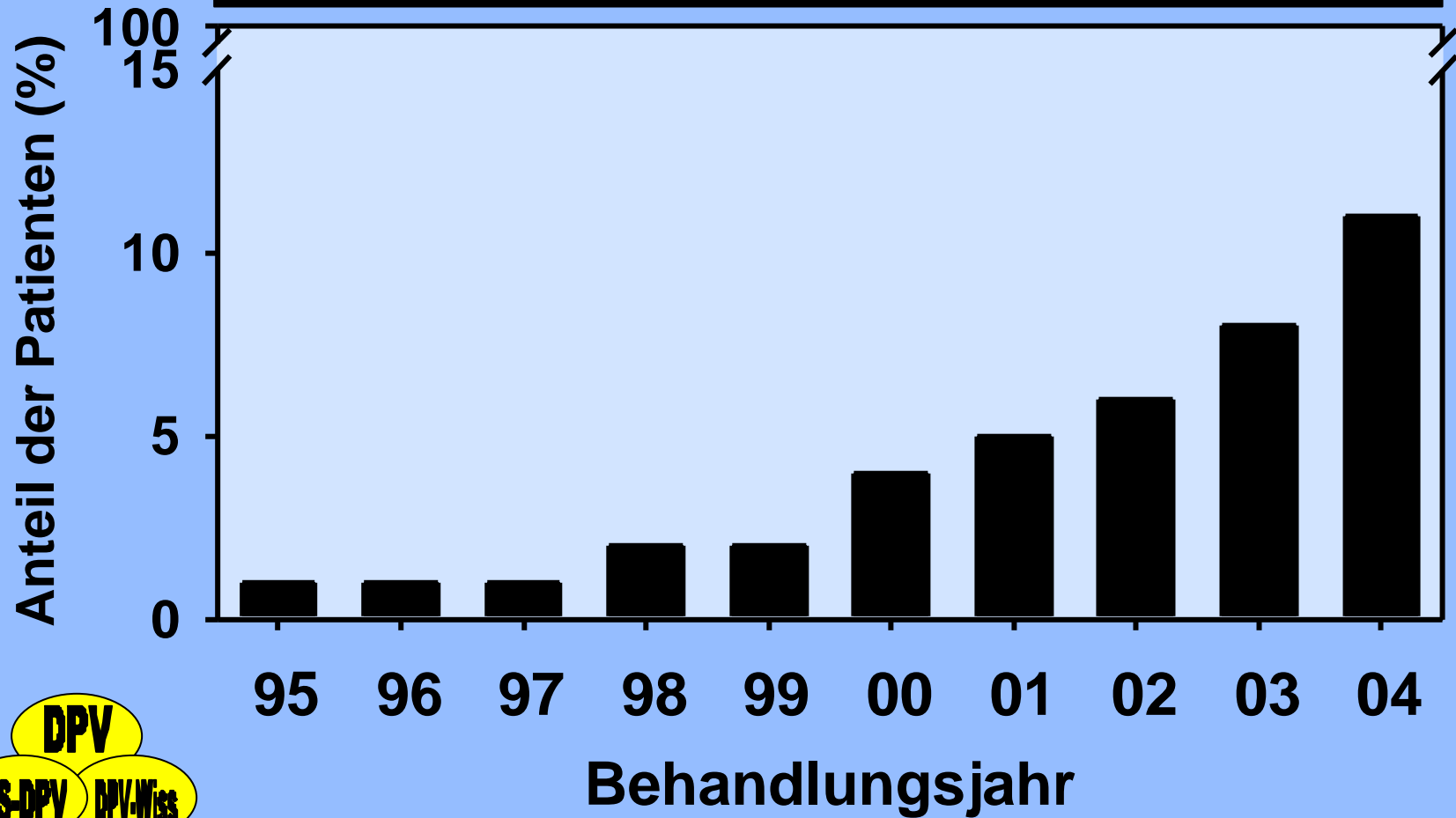
Basalrate Insulinpumpe



DPV-Wiss 03/2003

Uhrzeit

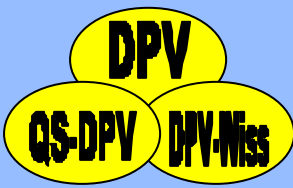
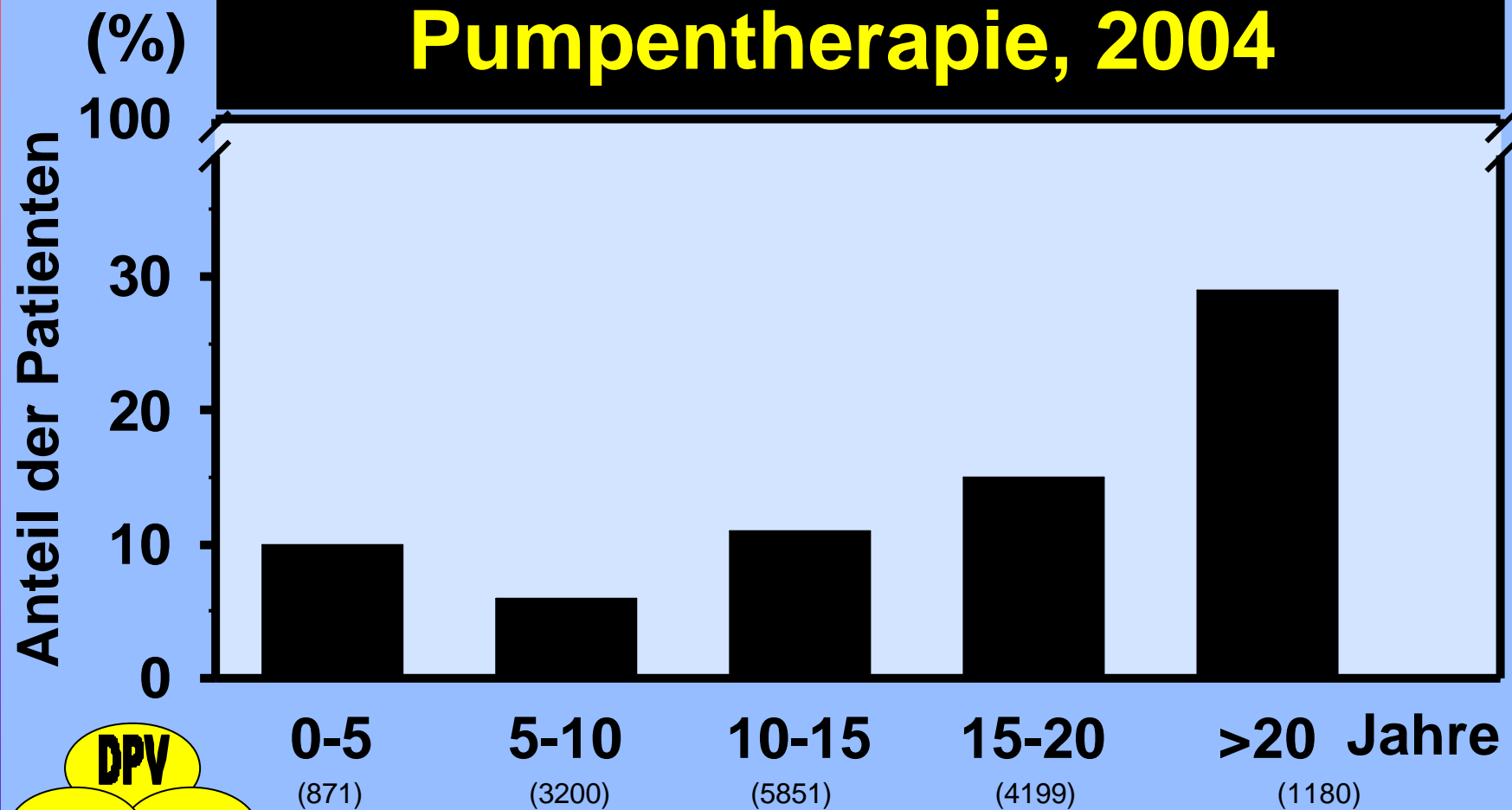
Insulinpumpentherapie



(Pädiatrie 03/2005)

Alter 0-20 Jahre, alle Institutionen

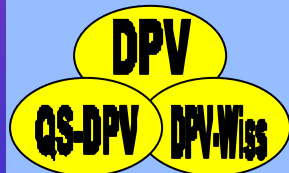
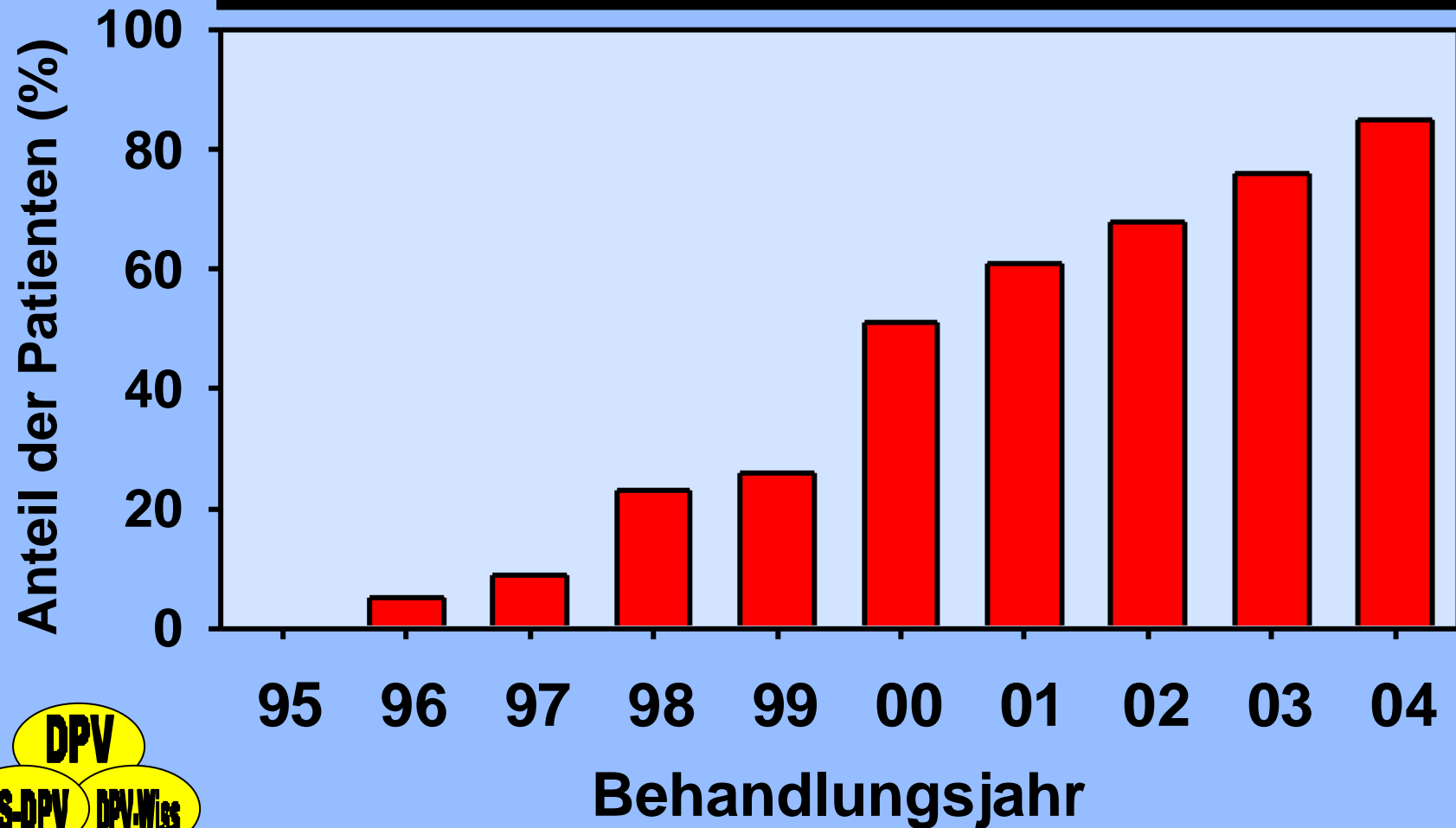
Pumpentherapie, 2004



15 301 Patienten mit Typ-1-DM

(Pädiatrie 03/2005)

Analoginsulin Pumpe



(Pädiatrie 03/2005)

Alter 0-20 Jahre, alle Institutionen