GUIDELINES

SAFETY MEASURES

7. If you ride with children PLEASE REMEMBER that adults should enter the lift first, followed by children. When exiting children should leave first. If the child is in a carriage then PLEASE TAKE THE CHILD IN YOUR ARMS WHEN ENTERING AND EXITING. In case of any problem PLEASE REMEMBER TO PRESS THE “DOOR OPENING” BUTTON.

8. It is STRICTLY FORBIDDEN to transport explosive, flammable and poisonous items if they are not in their original packing.

9. In case of a fire in the building the lift will automatically go to the bottom landing floor. After arrival you should leave the lift and exit the building.

10. Use of lifts during a fire IS STRICTLY PROHIBITED.
Family History

Father, smoker with dyslipidemia and hypertension, he died at the age of 63 (Stroke, he had the first stroke at the age of 56)

Mother, with uncomplicated arterial hypertension, 1 brother, 50 y.o. healthy with high cholesterol and normal blood pressure

Mr G.K. is a smoker (20 PY), refers healthy dietary habits, regular physical activity (Mo-Fr biking 7 Km 2 times/day, WE around 1 hour/Day swimming and biking), he is er arbeitet als Koch und berichtet über mittelmässig Stress am Arbeit
Art. Hypertension, ED 2009

2209-2011 Adalat R 1-0-1 blood pressure normal

2011 many drugs were tried and changed because of side effects or blood pressure out of normal range (Atacand 16 mgx2, Concor 10mg x2, Inhibace plusx2, Votum 20 mgx2, Tenormin 50 mgx2).

Actual Therapy: Amlodipin 10 mg (not regularly)
Physical examination

Blood pressure: 171/115 mm Hg, HR 76/Min sitting
166/112 mmHg, HR 84/Min standing

weight 81 Kg, height 182 cm, BMI 24.5 Kg/m²

Waist circ. 98 cm

Heart-Lung, Thyroid, Abdominal exam: ndn

Pulses ok, no vessel sound
<table>
<thead>
<tr>
<th>Test</th>
<th>Ergebnis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sodium</td>
<td>138 mmol/l</td>
</tr>
<tr>
<td>Potassium</td>
<td>3.8 mmol/l</td>
</tr>
<tr>
<td>Creatinin</td>
<td>78 µmol/l</td>
</tr>
<tr>
<td>GFR</td>
<td>104 (korrigiert für KöF 1.73m²)</td>
</tr>
<tr>
<td>Glucose (fasting)</td>
<td>5.4 mmol/l</td>
</tr>
<tr>
<td>Total Cholesterol</td>
<td>5.1 mmol/l</td>
</tr>
<tr>
<td>HDL</td>
<td>1.1 mmol/l</td>
</tr>
<tr>
<td>LDL</td>
<td>4.0 mmol/l</td>
</tr>
<tr>
<td>Triglyceride</td>
<td>1.9 mmol/l</td>
</tr>
<tr>
<td>TSH</td>
<td>1.02 mU/L</td>
</tr>
<tr>
<td>FT3</td>
<td>4.6 pmol/L</td>
</tr>
<tr>
<td>FT4</td>
<td>15.7 pmol/L</td>
</tr>
<tr>
<td>Urin</td>
<td>protein+</td>
</tr>
</tbody>
</table>
Mr G.K., 1970 Laboratory

Renin 62.4 mU/L
Aldosterone 144 ng/L
Aldosterone-Renin Quotient 2.3 mg/mU

Urin
Sodium 103 mmol/L
Potassium 51.6 mmol/L
Albumin/Creatinin 0.9 mg/mmol
1.2 New aspects

Because of new evidence on several diagnostic and therapeutic aspects of hypertension, the present guidelines differ in many respects from the previous ones [2]. Some of the most important differences are listed below:

1. Epidemiological data on hypertension and BP control in Europe.

2. Strengthening of the prognostic value of home blood pressure monitoring (HBPM) and of its role for diagnosis and management of hypertension, next to ambulatory blood pressure monitoring (ABPM).

3. Update of the prognostic significance of night-time BP, white-coat hypertension and masked hypertension.
Mr G.K., 1970 ABPM

Amlodipin at 9:40 AM

24-hour mean 159/101 mmHg, HR 84/Min
Day 162/104 mmHg, HR 87/Min Night 141/85 mmHg, HR 64/Min
1.2 New aspects
Because of new evidence on several diagnostic and therapeutic aspects of hypertension, the present guidelines differ in many respects from the previous ones [2]. Some of the most important differences are listed below:

4. Re-emphasis on integration of BP, cardiovascular (CV) risk factors, asymptomatic organ damage (OD) and clinical complications for total CV risk assessment.
5. Update of the prognostic significance of asymptomatic OD, including heart, blood vessels, kidney, eye and brain.
6. Reconsideration of the risk of overweight and target body mass index (BMI) in hypertension.
Mr G. K., 1970 Echocardiography

Left ventricular hypertrophy with normal ejection fraction (EF 59%).
Normal left atrium, Diastolic dysfunction Grad 1
<table>
<thead>
<tr>
<th>Other risk factors, asymptomatic organ damage or disease</th>
<th>Blood pressure (mmHg)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High normal</td>
<td>Grade 1 HT</td>
</tr>
<tr>
<td></td>
<td>SBP 130–139 or DBP 85–89</td>
<td>SBP 140–159 or DBP 90–99</td>
</tr>
<tr>
<td>No other RF</td>
<td>Low risk</td>
<td>Moderate risk</td>
</tr>
<tr>
<td>1–2 RF</td>
<td>Low risk</td>
<td>Moderate risk</td>
</tr>
<tr>
<td>≥3 RF</td>
<td>Low to moderate risk</td>
<td>Moderate to high risk</td>
</tr>
<tr>
<td>OD, CKD stage 3 or diabetes</td>
<td>Moderate to high risk</td>
<td>High risk</td>
</tr>
<tr>
<td>Symptomatic CVD, CKD stage ≥4 or diabetes with OD/RFs</td>
<td>Very high risk</td>
<td>Very high risk</td>
</tr>
</tbody>
</table>
**Allgemeine Angaben**

<table>
<thead>
<tr>
<th>Alter in Jahren</th>
<th>45 Alter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Syst. BD in mmHg</td>
<td>170 mmHg</td>
</tr>
</tbody>
</table>

**Blutfettwerte**

<table>
<thead>
<tr>
<th>LDL (1.94–6.47 mmol/l)</th>
<th>4 mmol/l</th>
</tr>
</thead>
<tbody>
<tr>
<td>HDL (0.65–1.94 mmol/l)</td>
<td>1 mmol/l</td>
</tr>
<tr>
<td>TG (0.57–4.52 mmol/l)</td>
<td>1.9 mmol/l</td>
</tr>
</tbody>
</table>

**Weitere Angaben**

<table>
<thead>
<tr>
<th>Raucher</th>
<th>○ Ja</th>
<th>○ Nein</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>○ Ja</td>
<td>○ Nein</td>
</tr>
<tr>
<td>Herzinfarkt bei Eltern, Grosseltern oder Geschwister vor dem 60. Lebensjahr</td>
<td>○ Ja</td>
<td>○ Nein</td>
</tr>
</tbody>
</table>

**Bewertung**

12.4%

Intermediäres Risiko
Your heart age is about 49 compared to a person of the same age, gender and ethnicity with optimal risk factors.

Interventions

Future smoking category: 20+/day

Systolic Blood Pressure: 170 → 130

Total Cholesterol: 5.1 → 5.1

HDL Cholesterol: 1.1 → 1.1

NonHDL Cholesterol: 4.0

BMI: 24.5

http://www.jbs3risk.com/
On average, expect to survive to age 73 without a heart attack or stroke gaining 7.8 years through interventions.

Expected life without a heart attack or stroke

Your risk of a heart attack or stroke in the next 10 years is 3.8% assuming you don’t die of anything else.
45 y.o. male with positive family history for cerebrovascular disease and arterial hypertension

Essential arterial Hypertension with LVH

Cardiovascular risk middle-high
Blood pressure reduction

Total cardiovascular risk reduction

Pharmacological therapy side effects reduction
HYPERTENSION
ARTERIELLE
Recommandations pour les médecins
Avis d’experts n’engageant pas la responsabilité légale de la SSH
2015

www.swisshypertension.ch

ARTERIELLE
HYPERTONIE
Empfehlungen für Ärzte
Expertenmeinung ohne Haftung
2015

www.swisshypertension.ch

IPERTENSIONE
ARTERIOSA
Raccomandazioni per il medico
Il parere degli esperti non vincola giuridicamente la SSI
2015

www.swisshypertension.ch
Blood pressure reduction

Generell Blutdruck < 140/90 mmHg

Diabetiker und Nierenpatienten < 140/85 mmHg

Isolierte systolische Hypertonie* < 150 mmHg

* gilt auch für Betagte bei fehlender Orthostase

www.swisshypertension.ch
Which Therapy?

**Treatment strategies and choice of drugs**

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Class&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Level&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Ref.&lt;sup&gt;c&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diuretics (thiazides, chlorthalidone and indapamide), beta-blockers, calcium antagonists, ACE inhibitors, and angiotensin receptor blockers are all suitable and recommended for the initiation and maintenance of antihypertensive treatment, either as monotherapy or in some combinations with each other.</td>
<td>I</td>
<td>A</td>
<td>284, 332</td>
</tr>
</tbody>
</table>
Antihypertensiva

RAAS-Blocker

β-Blocker

Ca²⁺-Antagonist

Diuretikum

Antihypertensiva erster Wahl

Antihypertensiva für alternative Initialtherapie
<table>
<thead>
<tr>
<th>Risikostufe</th>
<th>systolisch 140–159 und/oder diastolisch 90–99 mmHg</th>
<th>systolisch ≥160 und/oder diastolisch ≥100 mmHg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leicht bis mässig</td>
<td>Monotherapie</td>
<td>Monotherapie oder Kombinationstherapie</td>
</tr>
<tr>
<td>Hoch oder sehr hoch</td>
<td>Monotherapie oder Kombinationstherapie</td>
<td>Kombinationstherapie</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>0</td>
<td>Keine Behandlung</td>
<td>Lebensstil verbessern mehrere Monate lang, dann Medikamente: Ziel BD &lt;140/90</td>
</tr>
<tr>
<td>1 bis 2</td>
<td>Lebensstil verbessern</td>
<td>Keine Behandlung</td>
</tr>
<tr>
<td>≥ 3</td>
<td>Lebensstil verbessern</td>
<td>Keine Behandlung</td>
</tr>
<tr>
<td>Endorganschaden, eGFR 30-60, DM</td>
<td>Lebensstil verbessern; Medikamente: Ziel BD &lt;140/90</td>
<td>Lebensstil verbessern; Medikamente: Ziel BD &lt;140/90</td>
</tr>
<tr>
<td>Symptomatische CV Erkrankung, eGFR &lt;30, DM mit Endorganschaden</td>
<td>Lebensstil verbessern; Medikamente: Ziel BD &lt;140/90</td>
<td>Lebensstil verbessern; Medikamente: Ziel BD &lt;140/90</td>
</tr>
</tbody>
</table>

*Blutdruck in mmHg
Combination therapy vs Monotherapy

Wald et al, Am J Medicine 2009
Drugs do not work if patient are not going to take them

— C. Everett Koop, M.D.
ONTARGET: ACE or ARB, but not both!
The primary endpoint was a composite of all-cause death, non-fatal acute myocardial infarction, non-fatal stroke, and hospitalization for worsening heart failure.
The Thiazide Myth

- Hydrochlorothiazide (HCTZ) has become by far the most commonly prescribed antihypertensive drug in the US.
- However, there is no evidence that HCTZ in its usual dose of 12.5-25 mg daily reduces myocardial infarction, stroke, or death.
- Because outcome data at the usual daily dose of 12.5-25 mg are lacking, antihypertensive efficacy is paltry, and adherence is poor, HCTZ is an inappropriate first-line drug in hypertension. If a “thiazide-type” diuretic is indicated, either chlorthalidone or indapamide should be selected.
ACCOMPLISH: ACE-I/Ca-Ant oder ACE-I/Diuretikum?

Benazepril plus hydrochlorothiazide

20% Risk Reduction
P=0.0002

Benazepril plus amlodipine

Cardiovascular death
Non-fatal myocardial infarction
Non-fatal stroke
Hospitalization for unstable angina
Coronary revascularization
Resuscitated sudden death

HR (95% CI): 0.80 (0.72, 0.90)

NEJM 2008
ACCOMPLISH: ACE-Inhibition/Ca-Antagonist and Progression of Nephropathy

![Graph showing the comparison of Benazepril plus hydrochlorothiazide and Benazepril plus amlopidine.](image)

- Benazepril plus hydrochlorothiazide (215 events)
- Benazepril plus amlopidine (113 events)

Log-rank p<0.0001

Number at risk:
- Benazepril plus hydrochlorothiazide: 5762, 5576, 5459, 5307, 5139, 4936, 2956, 1506
- Benazepril plus amlopidine: 5744, 5578, 5452, 5336, 5203, 5022, 3016, 1559

UniversitätsSpital Zürich

Bakris Lancet 2010
Mr G.K., 1970

Therapy fix combination of CA-Ant / ACE-I

Blood pressure: 136/82 mm Hg, HR 68/Min sitting
130/80 mmHg, HR 74/Min standing

House measurements 125-130/75-80 mmHg
Herr G.K., 1970

Langzeitig Blutdruckmessung

Antihypertensiv drug at 8:00

24-hour mean 120/80 mmHg, HR 67/Min
Day 121/83 mmHg, HR 69/Min Night 106/68 mmHg, HR 58/Min