Data provided by:

PROF KRISELA STEYN
Chronic Disease Initiative for Africa (CDIA)

PROF ALTA SCHUTTE
Hypertension in Africa Research Team (HART)
North-West University
Hypertension: a major CVD risk factor and causally linked to

- Stroke
- Myocardial infarction
- End-stage renal disease
- Congestive Heart failure
- Peripheral vascular disease
- Blindness

Non-optimal BP responsible for about 60% of stroke globally and 50% of ischaemic heart disease (WHO (2004))
HOW LARGE IS THE PROBLEM OF HYPERTENSION IN SOUTH AFRICA?

HOW DOES IT COMPARE TO OTHER AFRICAN SETTINGS?
First National BP Survey in South Africa

- First Demographic and Health Survey 1998. (SADHS)
- 13 249 Adults 15 years and older.
- BP ≥ 140/90mmHg and/or using medication
- Prevalence- age standardised against to World population: Equal to 6.3 million adult South Africans.

<table>
<thead>
<tr>
<th></th>
<th>MEN</th>
<th>WOMEN</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>21%</td>
<td>15%</td>
<td>24.4%</td>
</tr>
</tbody>
</table>
Prevalence of hypertension in African-origin populations

Cooper et al., 1997; Steyn et al., 2001.
WHAT IS THE IMPACT OF HYPERTENSION ON THE MORTALITY PATTERN IN SOUTH AFRICA?
### IMPACT OF HYPERTENSION ON MORTALITY IN PEOPLE ≥30 YEARS IN SOUTH AFRICA IN 2000

<table>
<thead>
<tr>
<th>CONDITION</th>
<th>% OF DEATHS DUE TO HYPERTENSION</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISCHAEMIC HEART DISEASE</td>
<td>41.7</td>
</tr>
<tr>
<td>STROKE</td>
<td>49.6</td>
</tr>
<tr>
<td>HYPERTENSIVE DISEASE</td>
<td>71.5</td>
</tr>
<tr>
<td>OTHER CVD</td>
<td>21.6</td>
</tr>
</tbody>
</table>

Norman et al 2007. BOD at the MRC
What happened to the prevalence of hypertension since 1998?

Comparison of the hypertension prevalence measured in 1998 in SADHS and the National Income Dynamic Survey (NIDS) conducted in 2008 (UCT)
Trends in the prevalence of Hypertension (BP ≥ 140/90 mmHg and/or medication) in SA in men.

Bradshaw et al MRC and CDIA 2011
Trends in the prevalence of Hypertension (BP ≥ 140/90 mmHg and/or medication) in SA in women

Bradshaw et al MRC and CDIA 2011
Results: Many Participants with Optimal BP at baseline followed for 5 years developed hypertension during this period. (PURE Study)

Schutte et al. Inter J Epidemiol. 2012;41;114-1123. Hypertension in Africa Research Team (HART) North-West University
Which lifestyle population characteristics are associated with higher levels of hypertension and

Can they be modified?
LIFESTYLE RISK FACTORS ASSOCIATED WITH HYPERTENSION

- HIGH SALT INTAKE –
  1) DISCRETIONARY SALT (added during food preparation and at table)
  2) FOOD INDUSTRY ADDITIONS

- EXCESSIVE ALCOHOL USE

- OVERWEIGHT AND OBESITY
Are behavioural risk factors to be blamed for the conversion from optimal blood pressure to hypertensive status in Black South Africans? A 5-year prospective study

Aletta E Schutte,1* Rudolph Schutte,1 Hugo W Huisman,1 Johannes M van Rooyen,1 Carla MT Fourie,1 Nico T Malan,1 Leoné Malan,1 Catharina MC Mels,1 Wayne Smith,1 Sarah J Moss,2 G Wayne Towers,3 H Salomé Kruger,3 Edelweiss Wentzel-Viljoen,3 Hester H Vorster3 and Annamarie Kruger4

1Hypertension in Africa Research Team (HART), North-West University, Potchefstroom, South Africa, 2Physical Activity Sport and Recreation, North-West University, Potchefstroom, South Africa, 3Centre of Excellence for Nutrition, North-West University, Potchefstroom, South Africa and 4Africa Unit for Transdisciplinary Health Research (AUTHeR), North-West University, Potchefstroom, South Africa

*Corresponding author. Hypertension in Africa Research Team (HART), North-West University, Private Bag X6001, Potchefstroom 2531, South Africa. E-mail: Alta.Schutte@nwu.ac.za

Prospective Urban Rural Epidemiology (PURE) study: N=2021

North West Province (black South Africans older than 35 years)
Results and Discussion:

Conclusions of Schutte et al 2012

By simply focussing on **conventional risk factors**: the data confirm the importance of especially **alcohol intake and abdominal obesity** in contributing to cardiovascular changes over **5 years**.

To highlight CVD **prevention**, our results specifically support legislation on increased alcohol taxes, banning alcohol advertisements and advertising of unhealthy foods (fat tax?)
High salt and low potassium intake in South Africans

Urinary Na equates to a salt intake of:

- Black = 7.8 g/day
- Coloured = 8.5 g/day
- White = 9.5 g/day

All groups exceed WHO guidelines of < 5 g salt/d

Urinary K equates to a potassium intake of:

- Black = 55.6 mmol/day
- Coloured = 54.3 mmol/day
- White = 61.9 mmol/day

No groups meet JNC 6 guidelines of >= 90mmol/d

(Charlton et al., 2005, CDL, MRC)
Intervention and control diets

Control

- Salt (4 g/day)
- Sasko Sam bread
- Rama margarine
- Regular stock cubes
- Regular soup mixes
- 500 ml cooldrink/day

Intervention

- Solo® (4 g/day)
- Reduced salt bread
- Reduced salt margarine
- Reduced salt stock cubes
- Reduced salt soup mixes
- 500 ml maas/day

Charlton et al, 2008. Chronic Diseases of Lifestyle Unit, MRC
Change in BP (Pre to Post salt reduction)

Systolic BP
Between-diet difference (mean (SE))
= -6.19 (2.63) mmHg (P<0.05)

Diastolic BP
Between-diet difference (mean (SE))
= -0.59 (1.22) mmHg

Charlton et al 2008
Salt reduction in the 4 products is estimated to result in 7 400 fewer deaths due to cardiovascular diseases and 4 300 fewer non-fatal strokes compared with number of events in 2008.

Cost saving of up to R300 million would also occur.

Bertram et al, 2012. WITS
Trends in the Prevalence of BMI $\geq 25$ kg/m$^2$

Trends for high BMI

- Women
- Men

SA Heart/SAHS lecture series – Hypertension

Comparison of the rates of obesity (BMI ≥ 30) in SA men in 1998 and 2008

Bradshaw et al 2011. BOD, MRC and CDIA
Comparison of the rates of obesity (BMI ≥ 30) in SA women in 1998 and 2008

Bradshaw et al 2011. BOD, MRC and CDIA
WHAT QUALITY OF CARE ARE PEOPLE WITH HYPERTENSION RECEIVING IN SOUTH AFRICA?
Treatment status of hypertensive South African women (BP≥140/90mmHg) in 1998 SADHS

Steyn et al 2001, Chronic Diseases of Lifestyle Unit, MRC
Treatment status of hypertensive South African men (BP ≥ 140/90 mmHg)

Steyn et al. 2001, Chronic Diseases of Lifestyle Unit, MRC
Poverty and Awareness of Hypertension

Steyn et al. 2001, Chronic Diseases of Lifestyle Unit, MRC

Asset Index Quintiles

MEN AND WOMEN

Odds ratio

Poor
2
3
4
Rich

0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
Poverty and Hypertension Medication

Steyn et al. 2001, Chronic Diseases of Lifestyle Unit, MRC
Poverty and Control of Hypertension

Steyn et al. 2001, Chronic Diseases of Lifestyle Unit, MRC
HOW CAN THE DIAGNOSES AND MANAGEMENT OF HYPERTENSION BE IMPROVED IN SOUTH AFRICA?

(PARTICULARLY PUBLIC HEALTH ASPECTS OF CARE)
- Opportunistic screening at all possible contact with the health system by suitably trained ‘lay people’

- Free access monitoring of HPT patients

- Global CVD risk profiles as bases of treatment

- Reasonably priced combination therapy, ‘polypill’
Understand your target population’s knowledge, perception and actions regarding HPT and related risk factors

Patient seen as full partner in the therapeutic relationship. Enable patients to make healthy lifestyle choices and to adhere to their treatment.

Cost-effective treatment – fit therapeutic regime to the real budget of the patient and healthcare system
CONCLUSIONS 1

- Hypertension is extremely common in SA and contributes significantly to the burden of non-communicable diseases

- The prevalence of hypertension has increased in SA in the last decade

- Hypertension is associated with high rates of modifiable lifestyle related risk factors
CONCLUSIONS 2

- DIAGNOSES, TREATMENT AND CONTROL OF HYPERTENSION (TREATMENT STATUS) IS POOR IN SA

- POOR SOUTH AFRICANS WITH HYPERTENSION HAVE MUCH WORST TREATMENT STATUS THAN WEALTHIER ONES

- A RANGE OF PUBLIC HEALTH INTERVENTIONS ARE REQUIRED TO IMPROVE THE DIAGNOSES AND MANAGEMENT OF HYPERTENSION IN SA.
THANK YOU!