

- Cultural factors
 - Attitudes
 - Beliefs
 - Family influence
- Biological factors
 - Age
 - Gender
 - Weight
 - Disease
 - **Genes**
 - Pharmacogenetics
 - Pharmacogenomics

Cardiovascular drugs and racial/ethnic origin

- Ace inhibitors
 - More effective in Caucasians than in African Americans
- Beta - Blockers
 - More effective in Caucasians than in African Americans
- Alpha - Blockers
 - More effective in Caucasians than in African Americans
- **Thiazide (diuretic)**
 - More effective in African Americans than in caucasians

BiDil in African Americans with Congestive Heart Failure

- Isosorbide/hydralazine combination
- **BiDil** is the first drug approved for use in African-Americans only

EFFECTIVENESS OF SOME COMMON CLASSES OF DRUGS

Class of drug	Non-responders (%)
SSRIs	10 - 25
ACE inhibitors	10 - 30
Beta-blockers	15 - 25
Tricyclic Anti-depressants	20 - 50
HMGCoA reductase	30 - 70
Beta2 agonists	40 - 70

Adverse responses to therapeutic drugs (USA data)

Annual Prescriptions	Adverse responses	Hospitalizations	Deaths
3.2 bn	2.1 m	1 m	100,000

Lazarou et al JAMA 279; 1200- 1205; 1998

*Drugs in bold = important for this course