



**Ministerial Conference
WOMEN'S HEALTH: A LIFE COURSE APPROACH**



Diet and nutrition for women during different stages of life

Francesco Branca
Director
Department of Nutrition for Health and Development
WHO HQ



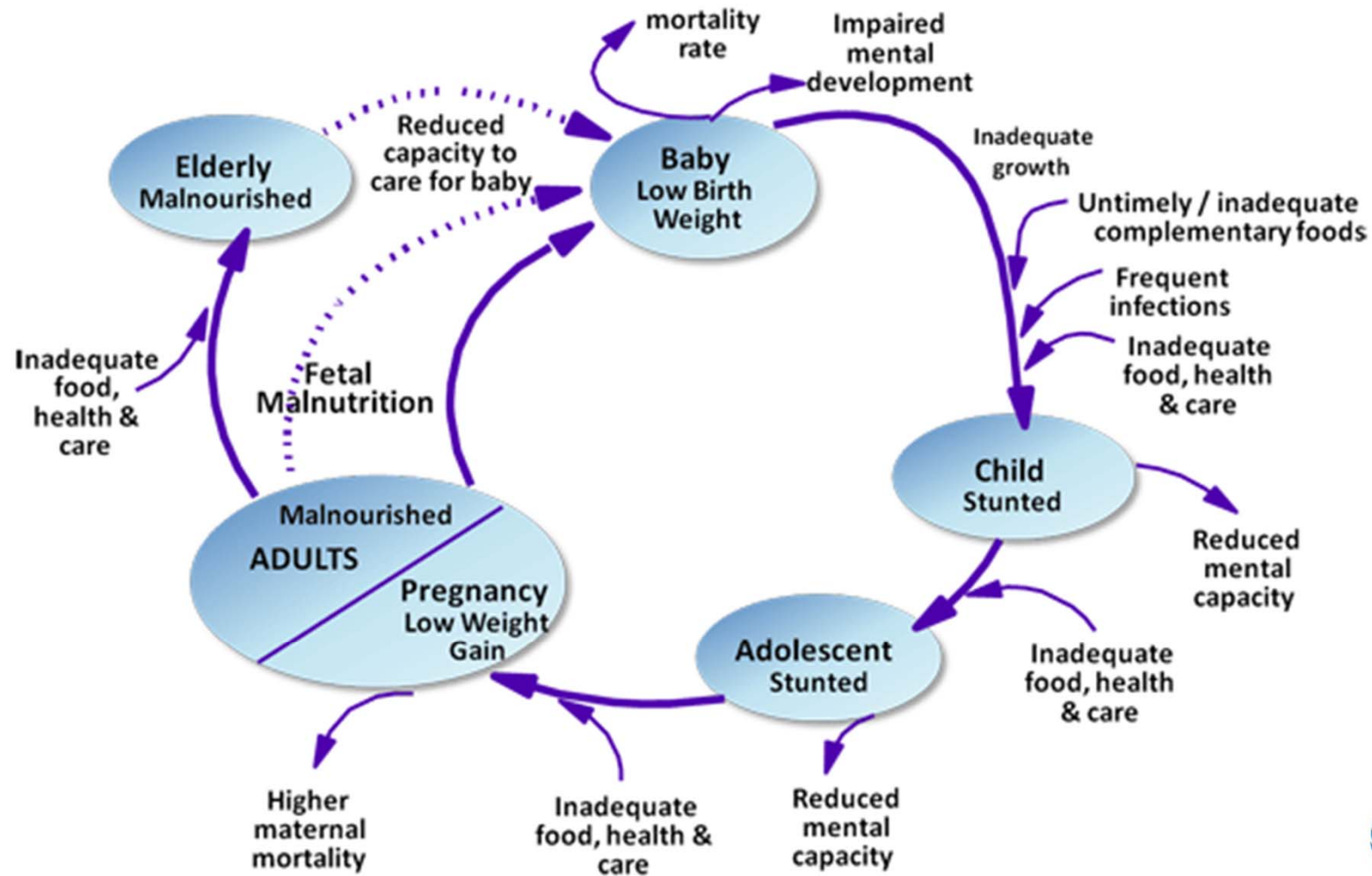


**Women are central to
addressing malnutrition
challenges**



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The intergenerational cycle of malnutrition



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**Women have important
reproductive and productive,
as well as care giving role**



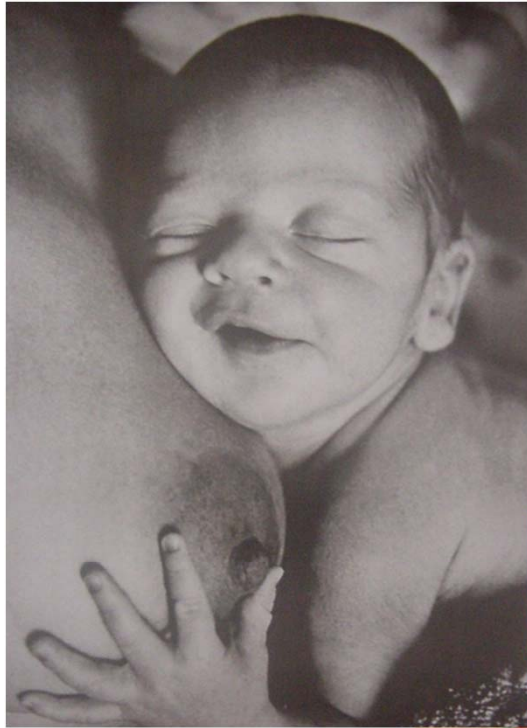
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Women play a key role in food production

- as farmers, livestock keepers, as processors, as store keepers, as traders, as consumers
- comprise 43% of the agricultural labour force in developing countries; 70% of agricultural workers in Africa are women; are responsible for 80% of food storage and transport, 60% of harvesting and marketing activities and 100% of the processing of basic foods
- account for an estimated two-thirds of the world's 600 million poor livestock keepers



Women are main care givers



breastfeeding, role of preparing food and distributing food within their households, role of gathering water and wood, providing of health care

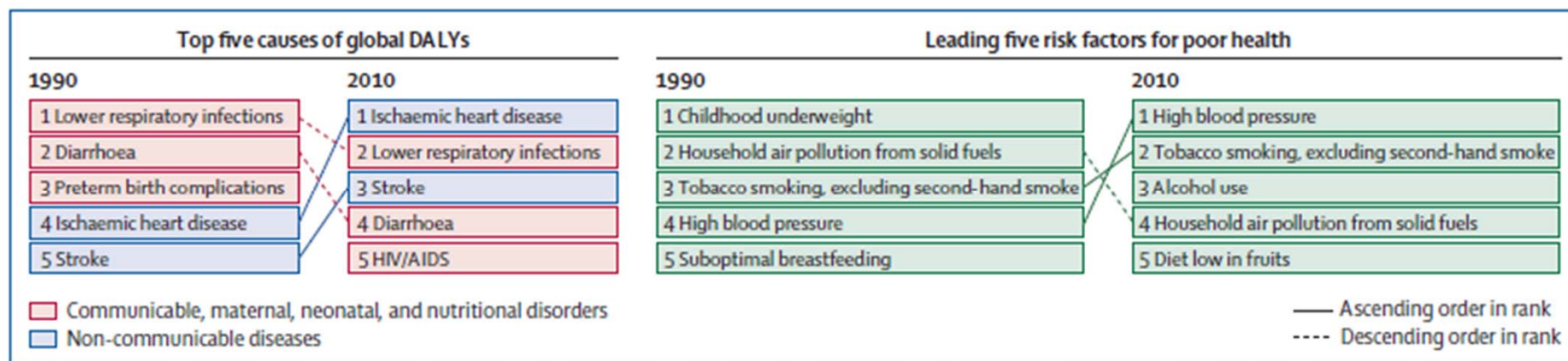
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Women and girls are a nutritionally vulnerable group and are affected by double burden of malnutrition



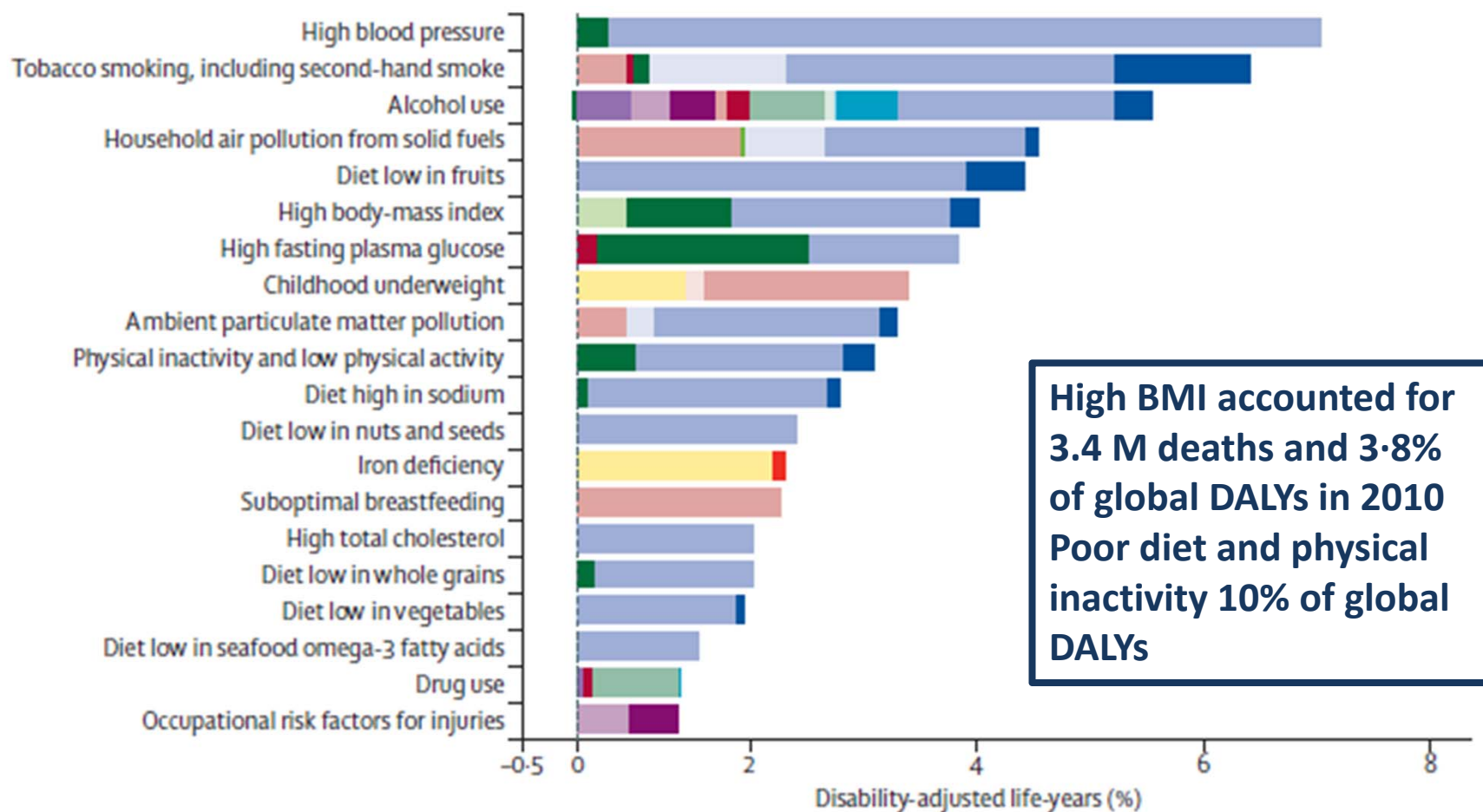
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Leading risk factors for global burden of disease in 1990 and 2010



www.thelancet.com Vol 380 December 15/22/29, 2012

Burden of disease attributable to 20 leading risk factors in 2010, as a % of global DALYs



www.thelancet.com Vol 380 December 15/22/29, 2012

Maternal and child undernutrition accounted for 1,400,000 deaths or 6.7% of the global burden of disease in 2010

- **childhood underweight** : 860,000 deaths, 3.1% DALYs
- **iron deficiency anaemia** : 120,000 deaths, 1.9% DALYs
- **sub-optimal breastfeeding** : 544,000 deaths, 1.9% DALYs
- **Vitamin A** : 120,000 deaths, < 0.8% DALYs
- **zinc deficiency** : 97,000 deaths, < 0.8% DALYs

A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010

Stephen S Lim, Theo Vos, Abraham D Flaxman, Goodarz Danaei, Kengli Shiryaj, Heather Adair-Rohani, Mark A Amann, H Ross Anderson, Kathryn G Andrews, Marc In Ayele, Charles Adkinson, Laralene Bacchus, Adil N Bahlal, Kalpana Balakrishna, John Balme, Suzanne Barker-Cole, Amanda Baxter, Michelle Bell, Joel D Blore, Fiona Blyth, Carlos Bonner, Guilherme Borges, Rupert Bourne, Michel Braussineq, Michael Brumar, Peter Brooks, Nigel G Bruce, Ben Brundage, Claire Bryson-Hancock, Chiara Bucci, Rosalinde Buchbinder, Fiona Bull, Richard J Burnett, Tim E Byers, Bianca Calafatis, Jonathan Carapies, Emily Carnahan, Zoe Chaffee, Fiona Charlson, Hongfei Chen, Jian Shen Chen, Andrew Tai-An Cheng, Jennifer Christine Child, Aaron Cohen, K Bikas Choudhury, Benjamin C Cowie, Sarah Dastgheib, Susan Darling, Adrian Davis, Laura Degehorst, Frank Denner, Don C Desjardis, Karen Devries, Mukesh Dhesani, Erik L Ding, E Roy Donney, Tim Dracup, Karen Edmond, Susu Fushit Ali, Rebecca Engel, Patricia Erwin, Saman Ahimi, Goff Fidler, Farhad Forouzan, Alireza Forouzan, Mariam Finkane, Seth Fisman, Francis Garry-Riviere, Greg Freedman, Michael Freeman, Emmanuel Gakaba, Sonu Ghosh, Edward Giovannucci, Gerhard Gmel, Kathryn Graham, Rebecca Grainger, Bridges Greene, David Gunnell, Holly R Gusteller, Wayne Hall, Hans W Haddad, Anthony Hagen, H Dean Hogood, Damian Hoy, Howard Hu, Bryan Hubbard, Sally Hutchings, Sydney Iribarren, Gemma J Ladd, Roshni Jaisankar, Jose Jimenez, Haidong Kan, John Karim, Nicholas Kassebaum, Noriko Kowakami, Young-Ho Khang, Shahab Khashtbradeh, Jon Pau Khoo, Cindy Krok, Frances Laden, Razali Laloo, Qingliang, Tim Lashley, Jona L. Lashley, James Light, Yang Li, John Kim Lin, Steven L Lipschutz, Stephen Littlewood, Rajad Llanos, Yuan Lu, Jodi M Lurie, Rana Malikzadeh, Leslie Mallinger, Wagner Marone, Lyn Marz, Robin Marks, Randall Martin, Paul McGee, John McGee, Sami Mehar, George Mensah, Tony R Merrett, Renata Michal, Catherine Michaud, Vinod Mishra, Khayryyah Mohd Haniffah, Aida Miskid, Lidia Morawski, Darush Mousaffarian, Tazha Murphy, Mohsen Naghavi, Bruce Neal, Paul Nelson, Juan Miguel Ndiaye, Rosane Ndam, Casey Oates, Soad Omer, Jessica Orchard, Richard Osborne, Bar Oza, Andrew Page, Kian D Pandey, Charles D H Parry, Erin Passmore, Jaydeep Pappa, Ned Pearce, Pamela Peltzer, Max Pezard, Michael Phillips, Dan Pope, Arden Pope, John Powell, Mayrae Rao, Horie Razavi, Eva A Relfues, Jürgen T Reher, Beate Rieck, Frederick P Rivara, Thomas Roberts, Carolyn Robinson, Jose A Rodriguez-Pereales, Isabella Roman, Robin Room, Liisa C Rosenfeld, Ananya Roy, Lesley Ruston, Joshua A Salomon, Ucheshiwa Sampson, Lidia Sanchez-Riera, Bita Sameroff, Amir Sapkota, Sonoya Sarda, Pellen Shi, Kevin Shields, Rupak Shrivastava, Gaurajit M Singh, David A Sien, Emma Smeeth, Kirk R Smith, Nikolaj C Skjeltorp, Kyle Steiner, Heidi Staudt, Larijacob Stovner, Rana Szeif, John Tansey, George D Tanskanen, Jimmy H Tien, Rik van Dongen, Aaron van Donkelaar, J Lennert Verma, Lakshmi Vijayakumar, Robert Wimmer, Myrta Weissman, Richard A White, Harvey Whitford, Susan T Wiersma, James W Williams, Hywel Williams, Warwick Williams, Nicholas Wilson, Anthony D Woolf, Paul Yip, Jon M Zelman, Alan D Oport, Christopher J Murray, Majid Ezzati

Summary
Background Quantification of the disease burden caused by different risks informs prevention by providing an account of health loss different to that provided by a disease-by-disease analysis. No complete revision of global disease burden caused by risk factors has been done since a comparative risk assessment in 2000, and no previous analysis has assessed changes in burden attributable to risk factors over time.
Methods We estimated deaths and disability-adjusted life years (DALYs; sum of years lived with disability [YLD] and years of life lost [YLL]) attributable to the independent effects of 67 risk factors and clusters of risk factors for 21 regions in 1990 and 2010. We estimated exposure distributions for each year, region, sex, and age group, and relative risks per unit of exposure by systematically reviewing and synthesizing published and unpublished data. We used these estimates, together with estimates of cause-specific deaths and DALYs from the Global Burden of Disease Study 2010, to calculate the burden attributable to each risk factor exposure compared with the theoretical minimum-risk exposure. We incorporated uncertainty in disease burden, relative risks, and exposures into our estimates of attributable burden.
Findings In 2010, the three leading risk factors for global disease burden were high blood pressure (7.0% [95% uncertainty interval 6.2–7.7] of global DALYs), tobacco smoking including second-hand smoke (6.3% [5.5–7.0]), and alcohol use (5.5% [5.0–5.9]). In 1990, the leading risks were childhood underweight (7.9% [6.8–9.4]), household air pollution from solid fuels (HAP; 7.0% [5.6–8.3]), and tobacco smoking including second-hand smoke (6.1% [5.4–6.8]). Dietary risk factors and physical inactivity collectively accounted for 10.0% (95% CI 9.2–10.8) of global DALYs in 2010, with the most prominent dietary risks being diets low in fruits and those high in sodium. Several risks that primarily affect childhood communicable diseases, including unimproved water and sanitation and childhood micronutrient deficiencies, fell in rank between 1990 and 2010, with unimproved water



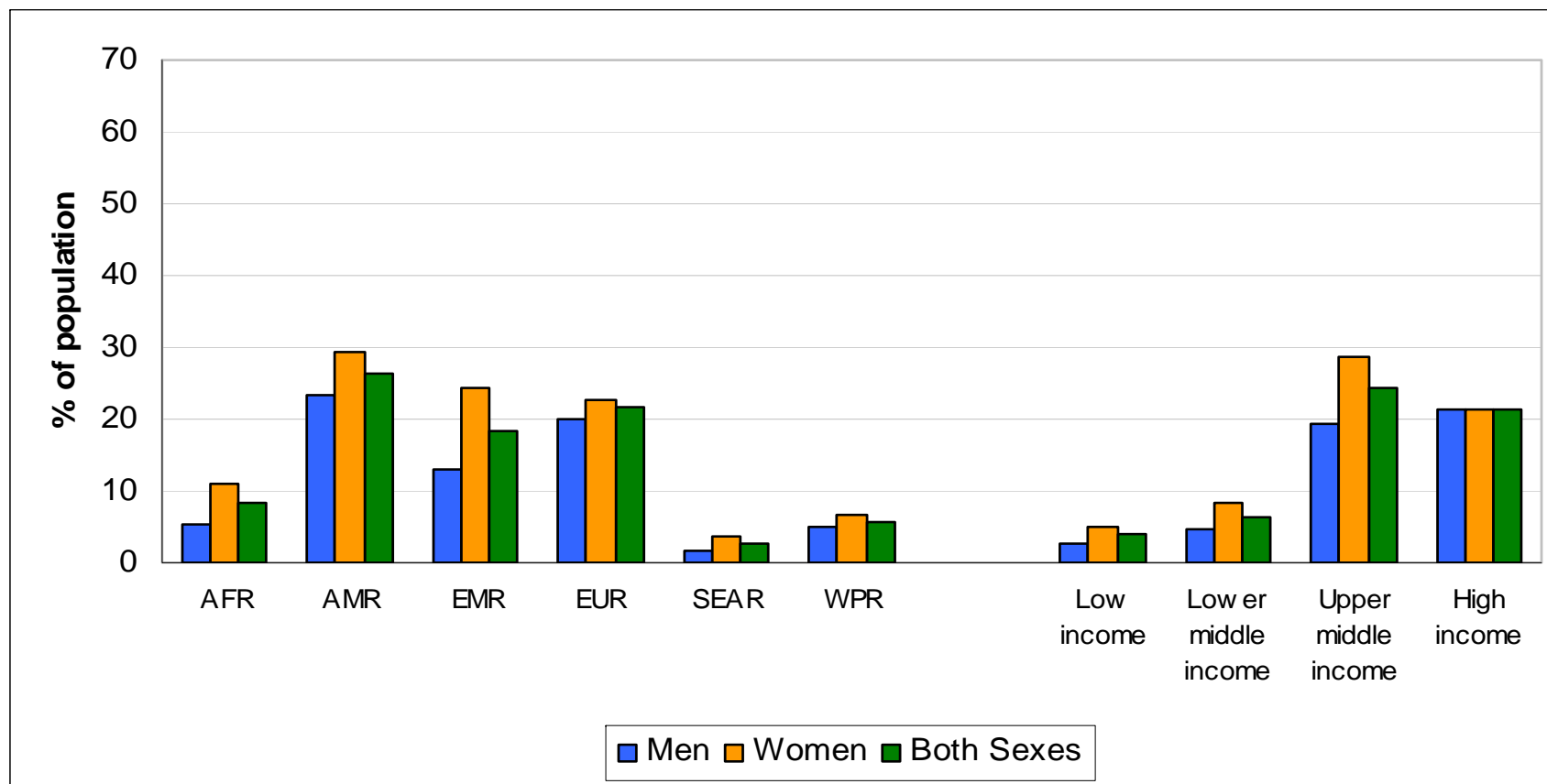
1 - Obesity

- About 35% of adult women worldwide are estimated to be overweight, a third of whom are obese. In the European Region, the Eastern Mediterranean Region and the Region of the Americas this proportion exceeds 50%
- The mean body mass index has increased over the past 20 years, leading to adverse metabolic effects on blood pressure, cholesterol and triglyceride concentrations, and insulin resistance, thereby increasing the risks of coronary heart disease, ischaemic stroke, type 2 diabetes and polycystic ovarian syndrome
- More obese women are becoming pregnant, leading to an increased risk of complications during pregnancy and delivery. Their infants tend to be born larger and are at greater risk of becoming obese and developing type 2 diabetes as children and adolescents. These women also tend to retain more weight after birth.



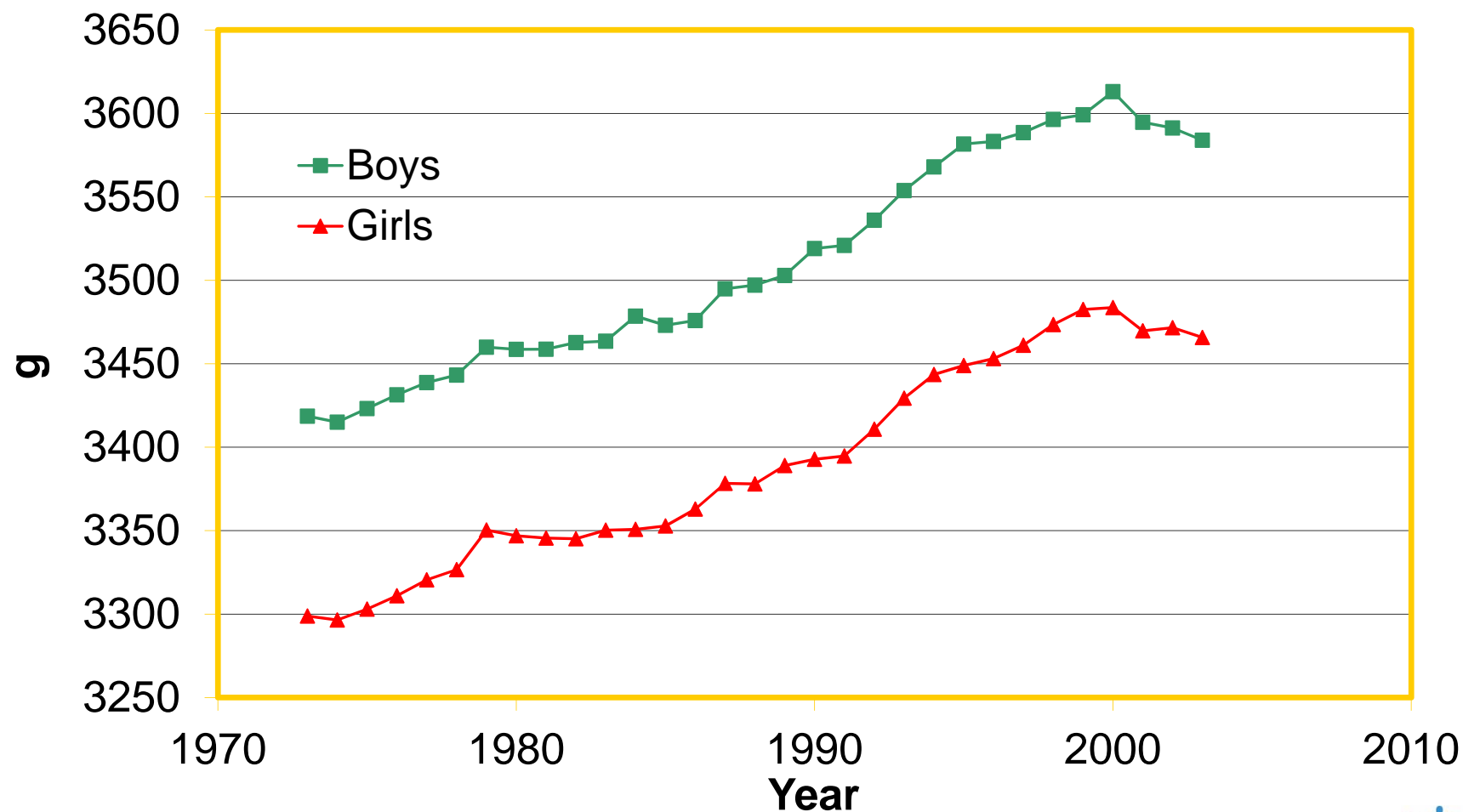
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500 million obese individuals aged 20+ years (2008)



Source: Global status report on noncommunicable diseases 2010. World Health Organization 2011

More obese mothers, larger birth weights



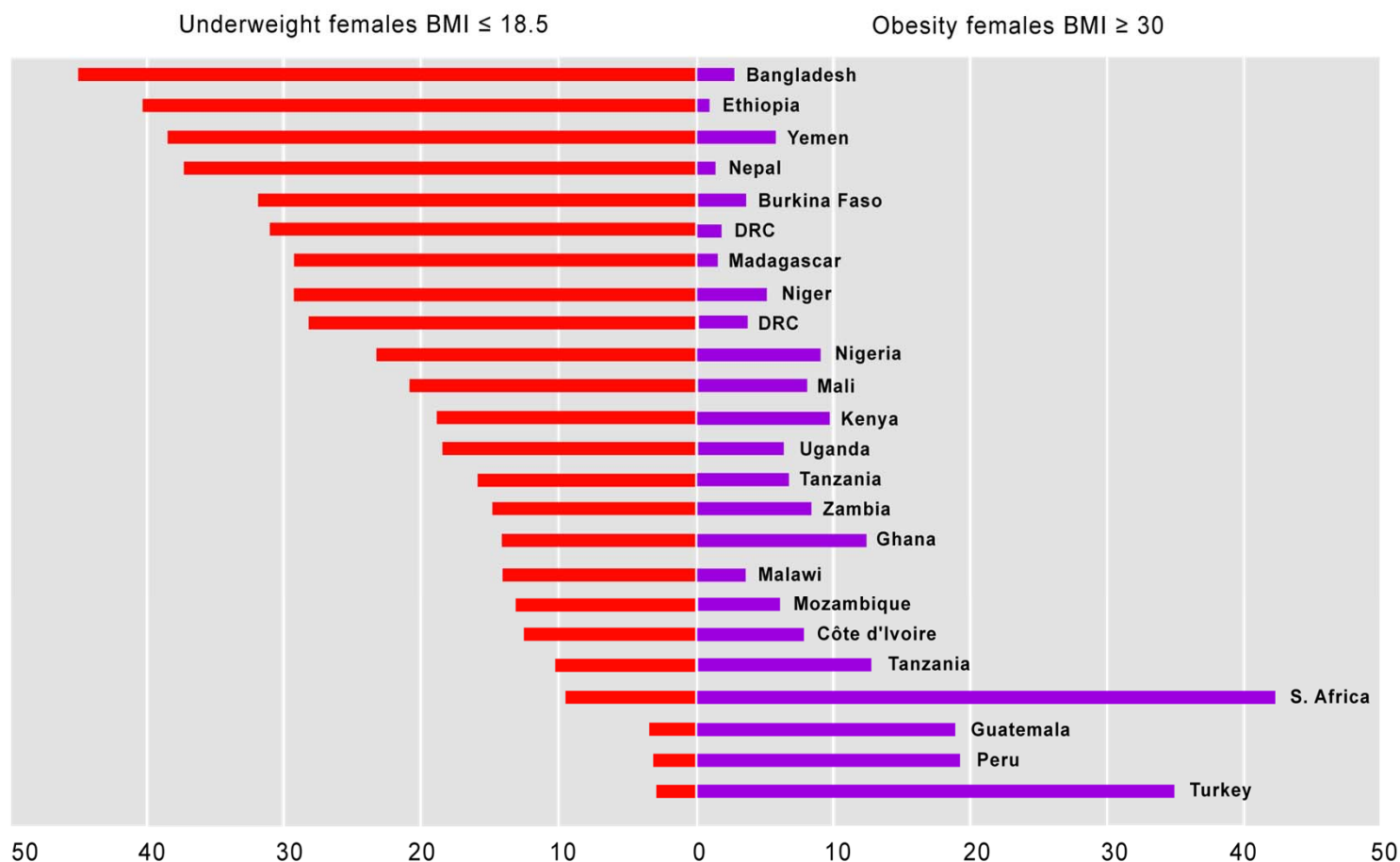
Source : Danish Birth Registry (1973-2003), courtesy KF Michaelsen

2 – Thinness and low stature

- Low body mass index ($<18.5 \text{ kg/m}^2$) and/or short stature (height $<145 \text{ cm}$) are common in women in low-income countries, with the highest rates observed in southern and southeastern Asia, followed by sub-Saharan Africa. Up to 1% in Europe have eating disorders
- More than 10% of women are shorter than 145 cm in Bangladesh, India and Nepal (in southern and south-eastern Asia) and Bolivia, Guatemala and Peru (in Latin America and the Caribbean).
- Maternal short stature and low body mass index independently have adverse effects on pregnancy outcomes: increased risk of complications in pregnancy, need for assisted delivery, child's low birth weight; and poor fetal physical development.



Underweight and obesity in women



Source: WHO Global Database on Body Mass Index



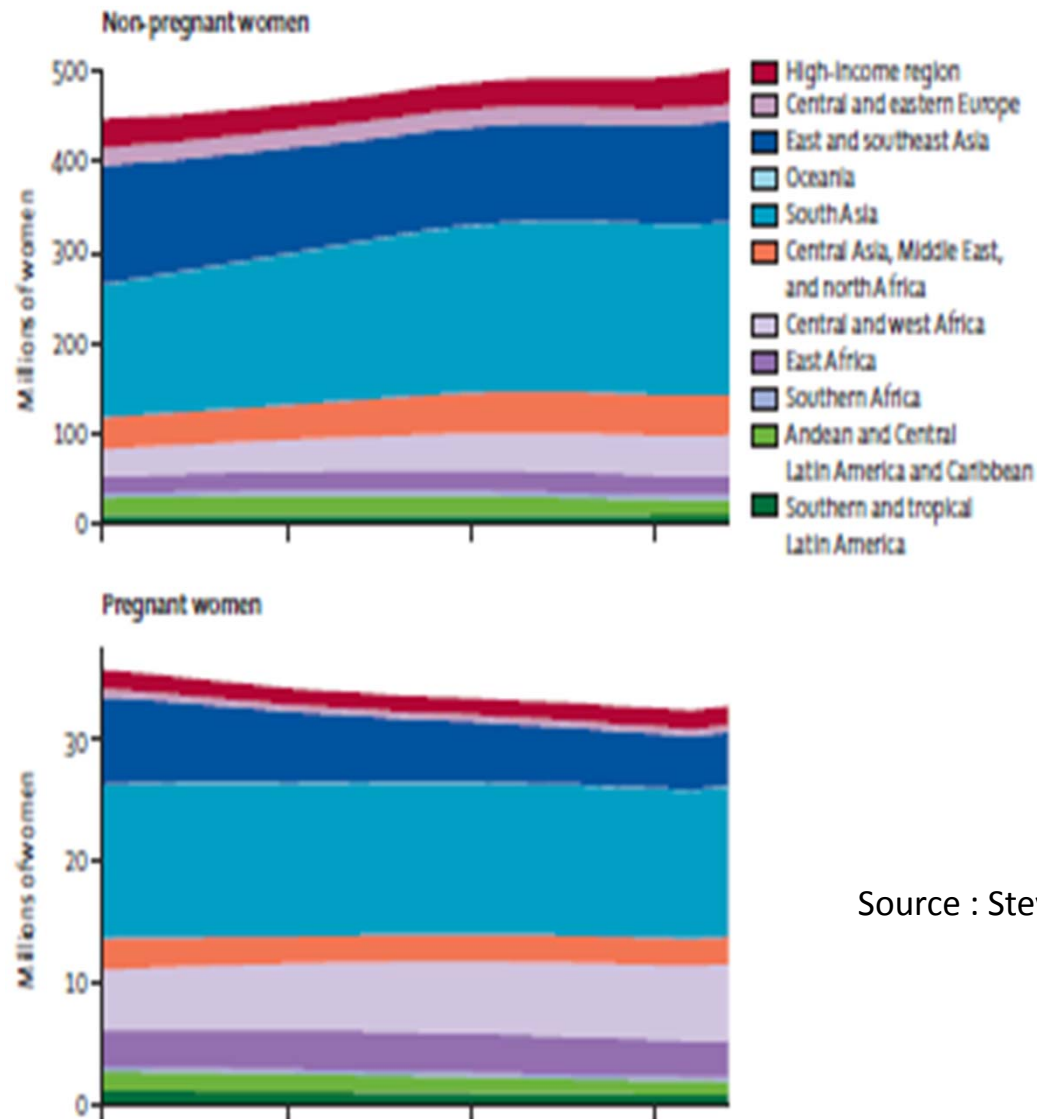
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3 - Anemia

- About 496 million women aged 15 to 49 years (30% of all women) are thought to be anaemic, at least half because of iron deficiency. The highest proportions of these anaemic women live in Africa (48% to 57%), and the greatest numbers are in south-eastern Asia (182 million women of reproductive age and 18 million pregnant women).
- The prevalence of anaemia in adolescent girls (15–19 years) can be even higher and exceeds 60% in Ghana, Mali and Senegal.
- Anaemia and iron deficiency, which are associated with a lower physical capacity and increased susceptibility to infections, need to be tackled before women become pregnant in order to reduce the risks of poor maternal health and low birth weight babies.



496 million non pregnant women and 32 million pregnant women with anemia (2013)



Source : Stevens et al. *Lancet Glob Health* 2013; 1: e16–25

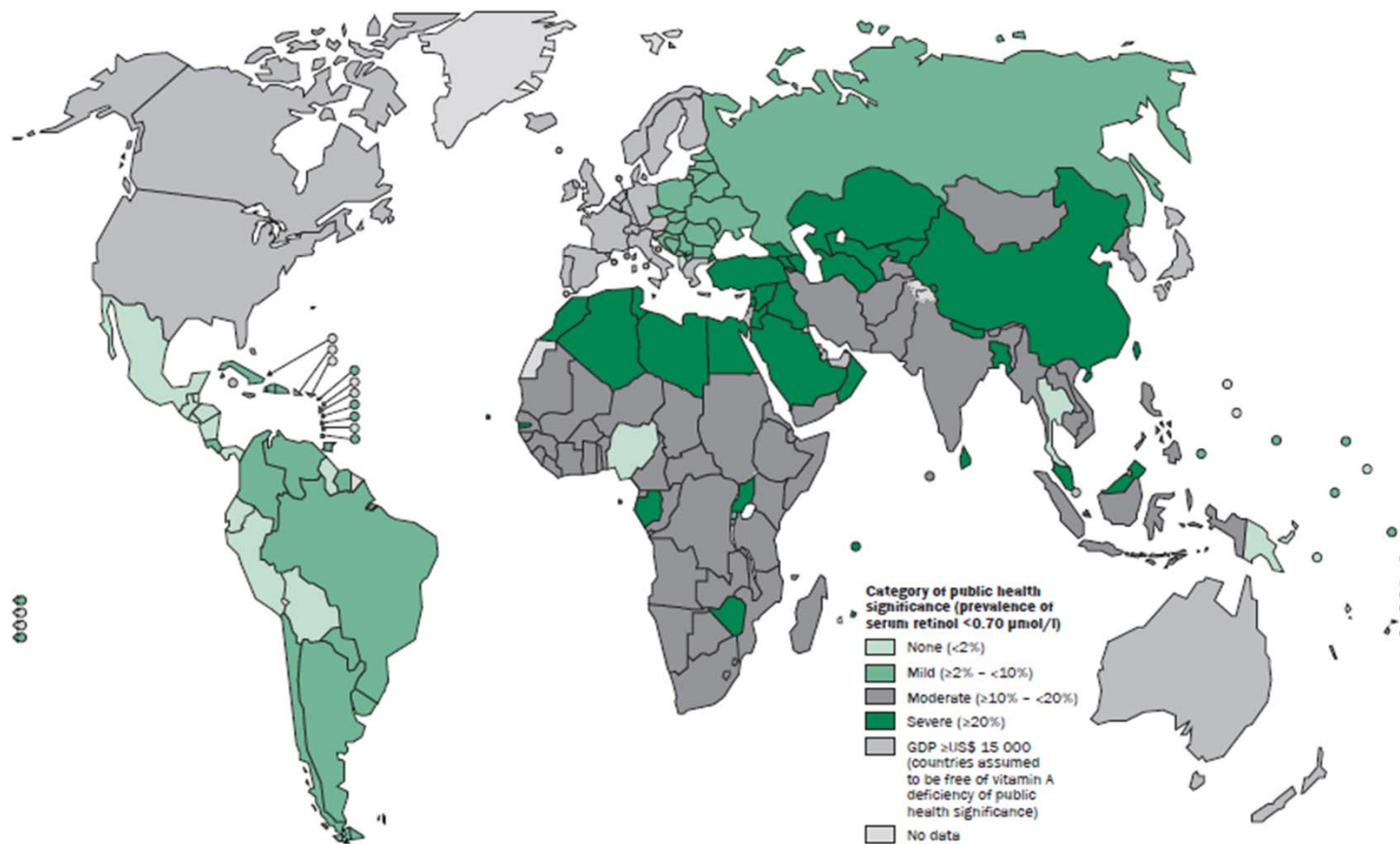
4 - Vitamin and mineral deficiencies

- An increasing number of women experience micronutrient deficiencies (of iron and vitamin A, for instance); almost half all pregnant women in the world are thought to have anaemia and 9.8 million pregnant women have night blindness.
- An estimated 19.1 million pregnant women (the highest proportions in Africa and south-eastern Asia) have low serum retinol concentrations. Maternal deficiencies in micronutrients may lower infant birth weight and jeopardize development and survival:
- maternal iodine deficiency is associated with congenital malformations and mental retardation in children, and a link between vitamin B12 deficiency and an increased risk of diabetes has been described in India.
- Insufficient intake of specific fatty acids, such as docosahexanoic acid, may also impede children's development



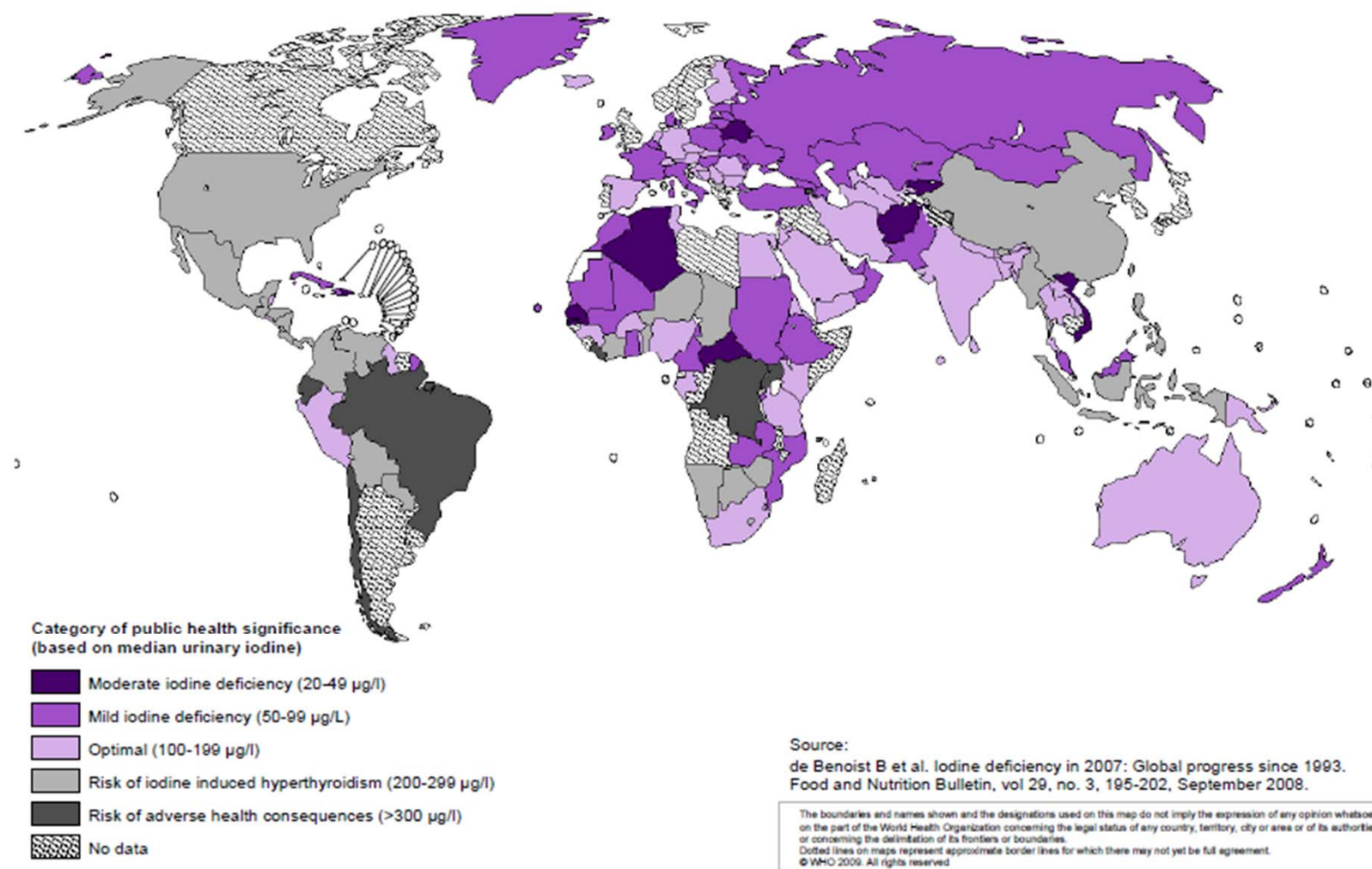
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Vitamin A status in pregnant women



Source : WHO VMNIS

Iodine status in 2007



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5 – Adolescent pregnancies

- In pregnant adolescents growth of the mother competes with that of the fetus, and the child's birth weight is on average 200 g lighter than that of children born to older mothers
- Adolescent pregnancies represent up to 40% of first pregnancies in most countries with high rates of maternal and child undernutrition.
- Pregnancy may place an additional metabolic burden on obese adolescents.



6 – Osteoporosis

- Risk of osteoporotic fractures moderate to high in Europe and North America
- Calcium balance, Vitamin D intake and weight bearing exercise among the responsible factors



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World map showing the distribution of COVID-19 cases by country. The map uses a color scale to represent the number of cases per 100,000 people:

- Red: $>300/100,000$
- Orange: $200-300/100,000$
- Green: $<200/100,000$

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Dietary inadequacies in European girls and women

	HIGH	LOW
Children 5-9	protein, fat, SFA, sugars, salt	PUFA, vit D
Children 10-14	fat, SFA, sugars, salt	vit D, folates, iron
Adolescents	fat, SFA, sugars, salt	vit D, folate, iron, PUFA, magnesium, iodine
Adults	Fat, SFA, sugars, salt	calcium, magnesium and iron
Elderly	Fat, sugars, salt	vit D, α -tocopherol, folate, calcium, magnesium, iron

Source : European Nutrition Report 2009

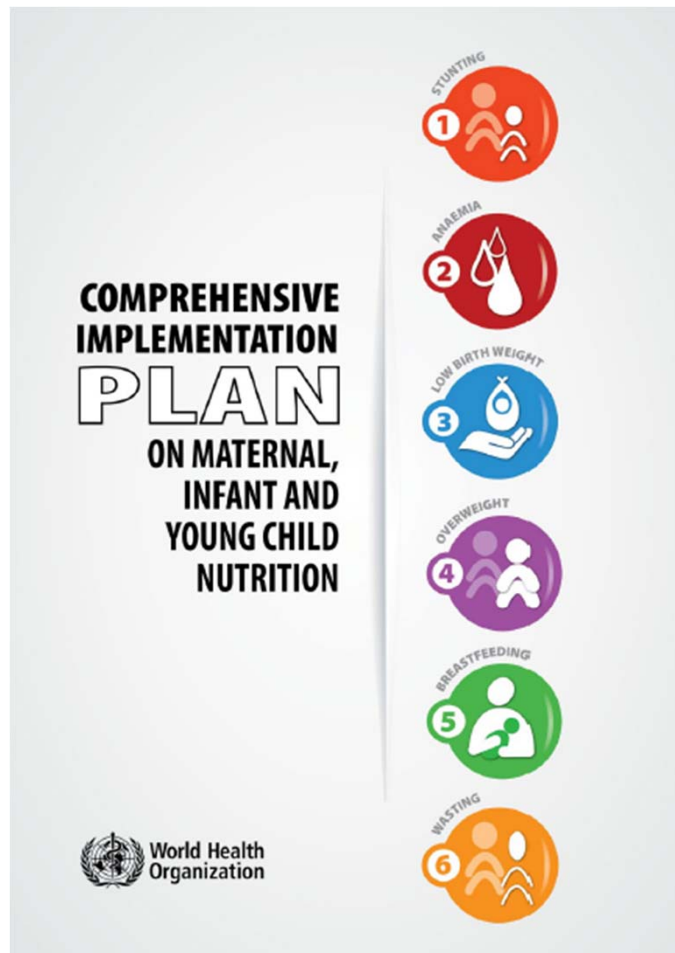
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**There are established interventions
and agreed policy commitments to
address nutrition challenges**



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Global commitments



Effective actions

All women of reproductive age	Women in special circumstances
<p>Iron and folic acid supplementation</p> <ul style="list-style-type: none"> – daily for pregnant women – intermittent in non-anaemic pregnant women – intermittent in menstruating women living in settings where anaemia is a public health concern 	<p>Appropriate care of women with low body mass index</p>
<p>Nutrition counselling through food-based dietary guidelines</p>	<p>Nutritional care and support for HIV-infected pregnant and lactating women</p>
<p>Calcium supplementation for the prevention and management of pre-eclampsia and eclampsia</p>	<p>Nutritional care and support in emergencies</p> <ul style="list-style-type: none"> – multiple micronutrient supplementation for pregnant women
	<p>Iodine supplementation (in case iodized salt is unavailable)</p>



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e-Library of Evidence for Nutrition Actions (eLENA)

eLENA

- A-Z list of interventions
- Health conditions
- Life course
- Nutrients
- Interventions
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New nutrition actions



As part of eLENA's expanding catalogue of nutrition actions, the latest guidance is now included on four new topics. If you would like to suggest a new topic to be included in eLENA, please contact us at: elena@who.int.

- Micronutrient supplementation in children with severe acute malnutrition
- Insecticide-treated nets to prevent malaria and anaemia in pregnant women
- Nutritional care for adults with active tuberculosis
- Optimal timing of cord clamping for the prevention of iron deficiency anaemia in infants

New in eLENA

New nutrition actions

New guidelines on intermittent iron supplementation in preschool and school-age children

New Cochrane review on vitamin D supplementation during pregnancy

Profiled interventions



HIV and infant feeding



Nutritional care of HIV-infected children



Vitamin A supplementation for HIV-infected women during pregnancy

WHO resources

[Global database on the Implementation of](#)

Partners

[The Cochrane Collaboration](#)

Contact us





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2nd International Conference of Nutrition

19-21 November 2014

- high-level global intergovernmental conference jointly organized by FAO and WHO, in collaboration with sister agencies and other global stakeholders in nutrition
- Joint Working Group of Member States
- Political declaration and framework for action



Commitments of the Rome declaration

1. Eradicate hunger and prevent all forms of malnutrition
2. Increase investments for effective interventions and actions
3. Enhance food systems by developing coherent public policies from production to consumption
4. Raise the profile of nutrition within relevant national strategies, policies, actions plans and programmes and align national resources accordingly
5. Improve nutrition by strengthening human and institutional capacities
6. Strengthen and facilitate, contributions and action by all stakeholders to improve nutrition
7. Develop policies, programmes and initiatives for ensuring healthy diets throughout the life course
8. Empower people and create an enabling environment for making informed choices about food products for healthy dietary practices and appropriate infant and young child feeding practices

European commitments

- Food environment and food systems: create healthy food and drink environments
- Promote the health gains of a healthy diet throughout the life-course, especially for the most vulnerable groups
 - adolescence
 - pregnancy
 - ageing population
- Reinforce health systems to promote healthy diets and to provide nutrition- and diet-related services
- Support surveillance, monitoring, evaluation and research of the population's nutritional status and behaviour

EU strategy on nutrition, overweight and related issues

WHO Ministerial Conference on Nutrition and Noncommunicable Diseases in the Context of Health 2020
Vienna
4–5 July 2013

5 July 2013

Vienna Declaration on Nutrition and Noncommunicable Diseases in the Context of Health 2020

WHO EURO Food and Nutrition Action Plan 2014–2020



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1 - Nutrition counselling and nutrition interventions during pregnancy

- Maternal dietary guidelines in countries of the WHO European Region : 17/52 countries (2008)
- Topics included in guidelines :
 - Exercise and pre-pregnancy weight
 - Pre-conceptional food guidance
 - Vitamin and mineral supplementation
 - Guidance on other substance i.e. alcohol and tobacco
 - Food-borne illnesses
- Vitamin and mineral supplementation
 - Folic acid before and until the 12th week of pregnancy
 - Iron
 - Vitamin D (sub-groups)



2 - Maternity protection

ILO Maternity Protection Convention 2000 (No. 183) and Recommendation (No. 191)

- postpartum maternity leaves
- provision of breastfeeding rooms and breaks



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3 – Communication and information

- Gender sensitive population campaigns
- Point of sale information
- Control of marketing food and drinks



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Summary and conclusions

- Obesity and anemia are major nutrition concerns in women throughout the lifecourse, with an intergenerational impact
- Dietary patterns are conducive to non communicable diseases
- Shaping the food system to provide a healthy food environment and to encourage healthy dietary choices
- Specific interventions to address nutritional status of women and to improve people's nutrition through women





<http://www.who.int/nutrition/en/index.html>



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