Diabetes is closely associated with cardiovascular disease (CVD). People with diabetes have a 2-4-fold increased risk of death from coronary heart disease, heart failure and stroke and a 15-40-fold increased risk of lower limb amputation. The increase results from early and severe generalized atherosclerosis, with contributions –especially in the longer term– from other pathological processes, such as microangiopathy, autonomic neuropathy and median sclerosis, which produce additional insults to the cardiovascular system.

Cardiovascular diseases are the major complications, the major cause of death, and the most expensive factor in economic analyses in people with type 2 diabetes, and diabetes is becoming increasingly important as a contributor to the global burden of cardiovascular disease. This is exacerbated still further by the epidemic rises in type 2 diabetes prevalence rates globally (now estimated by the International Diabetes Federation (IDF)¹ at 200 million people), and by the decreasing age at onset which is being noted in many parts of the world, particularly in less-developed countries.

In countries with predominantly non-Caucasian populations, type 2 diabetes now greatly outnumbers type 1 diabetes as the cause of diabetes in childhood and adolescence, and there is major concern as to the impact of this upon future CVD rates in very young adults. Also, while in some developed countries CVD rates have declined overall, no such decline is seen in people with diabetes, and the relative protection from cardiovascular disease enjoyed by younger women is lost when diabetes is present. Patterns of cardiovascular disease may vary in different countries and areas, for example the relative prevalence rates of coronary heart disease and stroke. However, the presence of diabetes amplifies that pattern.

¹www.idf.org.
cholesterol and novel factors such as complement-reactive protein (CRP) and plasminogen activation inhibitor-1 (PAI-1). The interaction goes deeper still, with common antecedents, for example obesity, physical inactivity, diet, lifestyle and low birthweight. The recognition of metabolic syndrome as a discrete entity emphasizes this. However the metabolic syndrome remains an entity whose precise definition is controversial, especially with respect to definitions of obesity and central obesity in non-Caucasian populations.

It is well known that CVD risk, associated with abnormalities in glucose metabolism and insulin action, commences well before the development of diabetes and that impaired glucose tolerance (IGT) conveys almost as much CVD risk as newly-diagnosed type 2 diabetes. IDF estimates of the numbers of people with IGT have now reached 300 million globally. In some less-developed areas IGT:diabetes ratios may approach 5:1, indicating the potential for steep rises in future diabetes and CVD prevalence rates.

Recent studies emphasize the importance of a multifactorial approach to management of CVD risk in people with diabetes –i.e. not merely considering glucose in isolation. Each individual risk factor must be managed to closely-defined targets (which may be more stringent than those applied outside the context of diabetes), by the use of appropriate antihypertensive therapy and lipid-lowering agents (particularly statins), and allied to the evidence-based use of “global” strategies including smoking cessation, dietary modification, increased physical activity, low-dose aspirin and angiotensin-converting enzyme inhibitors.

The issue of primary prevention also highlights the multiple-level link between diabetes and cardiovascular disease. Several diabetes primary prevention trials have now been published, the first being from China, and these show a 40-60% reduction of progression of IGT to diabetes over approximately 6-7 years as a result of lifestyle modification. Success, although to a lesser extent, has also been shown with pharmacological interventions such as metformin and acarbose. Prevention programmes, particularly those based on lifestyle, are likely to benefit CVD risk as well, and may also link up with other chronic disease prevention programmes (smoking, cancer, nutrition, mental health and even HIV/AIDS). This broad approach is strongly encouraged by the World Health Organization and has obvious advantages in low-resource settings, assuming that programmes are tailored to meet local circumstances.

Secondary prevention of cardiovascular disease in established diabetes also now has a secure evidence base, which strongly emphasizes the multifactorial approach discussed above.

The last decade has seen an acceleration of the search for new therapeutic agents which can simultaneously target diabetes, other components of CVD risk and atherosclerosis itself. A good example of such targets are the nuclear peroxisome proliferator-activated receptors (PPARS) which regulate various metabolic processes by controlling specific sets of genes. Fibrate drugs, commonly used in diabetic dyslipidaemias (raised triglyceride and low HDL-cholesterol) activate PPAR-alpha. Thiazolidinediones, which bind to PPAR-gamma, act as insulin-sensitizing agents, improve glycaemic control, reduce free fatty acid concentrations and exert potentially favourable effects on novel CVD risk factors such as CRP and PAI-1. In addition, PPAR-delta is a possible target for treating atherosclerosis by mediation of the inflammatory response.

However, while such research continues, the greatest challenge is to put the above recommendations into practice so that prevention can become a reality, and multifactorial disease management an integral part of health care systems.

References available from WHF Headquarters.
Diabetes in developing countries. A "real world" view

Shifalika Goenka MBBS PhD; Arima Mishra PhD; K.S. Reddy MD, DM(Card.), M.Sc, FAMS
Initiative for Cardiovascular Health Research in the Developing Countries

It is projected that, by the year 2025, two-thirds of deaths due to cardiovascular disease will be in the developing countries. Similarly, by 2025, two-thirds of people with diabetes will also be in the developing countries, and India will have the largest number of diabetes patients in the world at 57.2 million. Until recently, although we had epidemiological estimates and projections on diabetes and cardiovascular disease in developing countries, we lacked formative research in the area. Two in-depth studies, described below, are moving towards filling this gap.

In India, 60-80% of ambulatory health care delivery takes place through private general practitioners. We wanted to acquire meaningful data that would help in providing explanations and planning and implementing interventions. Through the use of ethnographic methods such as direct, nonthreatening observation and free-flowing interviews, we were able to discern sensitive key issues that frame the practices of the private general practitioners and patients and from it acquired cues for planning interventions. This gave us a real-world view of how diabetes was being managed at grass-roots level in ordinary people. Walk-in patients constituted the general practitioners’ clientele. They came in to obtain a service and paid across the counter for it, whether it was a blood pressure check, a blood glucose check or treatment for fever, urinary infection, etc. Tests for diabetes, its complications and co-morbidities were either rarely prescribed or prescribed much later than clinically desirable. We found that factors other than knowledge determined the practices of the private general practitioner.

Certain common findings between this study and the second study were as follows. Primary-care physicians felt ill-equipped in terms of knowledge, skill and infrastructure to handle diabetes and related morbidities, including acute emergencies. Poor referral linkages were both subjectively and objectively felt and observed. Inexpensive but life-saving drugs like aspirin were underutilized in the management of acute coronary events. Diabetes and tobacco were not thought to be significantly linked to cardiovascular disease.

The second study, a large detailed study of the capacity for prevention and control of cardiovascular disease and diabetes, was conducted in 2002-03, in India (Delhi, Thiruvananthapuram), Cameroon and Thailand by the Initiative for Cardiovascular Health Research in the Developing Countries (IC Health). This study utilized both qualitative and quantitative methods to evaluate the current capacity, in terms of health policies, programmes and infrastructure, from the perspectives of communities, patients, different categories of health care providers and policy-makers. While cardiovascular disease was widely recognized as a major public health problem, knowledge of risk factors and their relation to cardiovascular disease was inadequate among many community groups. Diabetes, smoking and physical inactivity were not among the well recognized causes of cardiovascular disease, especially in the lower socioeconomic groups. While early diagnosis and management of diabetes and its co-morbidities are critical to prevention of the macrovascular and the microvascular complications of diabetes, the disease often goes undetected for many years. In 44.5% of persons with diabetes, the diagnosis of diabetes had been made during a check-up in response to symptoms, and in over 40% it was made "by chance". This suggests a considerable level of delayed diagnosis. Multipurpose health workers and nurses saw great potential for their role in CVD prevention, but said that they were limited by lack of appropriate training. Diabetes self-care is very limited in the community, owing to inadequate patient education. Non-physician health care providers are not utilized, although many deficiencies exist in the limited care provided by physicians. Appropriately designed multi-pronged health intervention strategies and capacity-building are urgently needed to fill these multiple gaps, so that the epidemics of diabetes and cardiovascular disease do not overwhelm countries which are unprepared to prevent it.
Every year, an estimated 17 million people die of cardiovascular disease. In addition, at least one-third of the world population is currently at high risk of major cardiovascular events; an estimated 1.3 billion because of tobacco use, 1 billion because of overweight and at least another 1 billion because of elevated blood pressure, blood cholesterol or diabetes. Overall, elevated blood pressure and blood cholesterol alone are estimated to cause 7.1 million and 4.4 million deaths respectively, mainly due to strokes and heart attacks.

The risk associated with elevated blood pressure, cholesterol, smoking and body mass index does not occur across arbitrary thresholds, but in a continuum extending across almost all levels seen in different populations. A modest reduction in these risk factors, through an appropriate combination of population-wide and high-risk strategies, has the potential to reduce cardiovascular disease incidence by more than half.

**Absolute-risk approach**

Risk factors often cluster together, and the absolute risk of a major cardiovascular event (stroke or heart attack) in an individual depends on the overall risk profile. In most populations, a cardiovascular event is more likely in an individual with a relatively small increase in a number of risk factors, rather than an individual with a large increase in just one risk factor. Trying to identify high-risk individuals by focusing on cholesterol or blood pressure alone is thus of very limited value. A more cost-effective approach is to base treatment decisions on an individual’s risk of a cardiovascular event in the next 10 years. The absolute-risk approach enables the people who are most likely to benefit from treatment to be selected by means of risk stratification: this is of particular importance in settings with scarce resources.

**Implementing the absolute-risk approach**

There are no epidemiological data available to show the absolute risk of patients in various categories in different developing-country populations. However, given a certain level of expenditure appropriate to the current situation, risk stratification can help to identify the subset of patients most in need of treatment.

Health systems in low-income countries do not have sufficient financial resources to support resource-intensive risk stratification systems. Therefore the World Health Organization has developed a feasible risk-assessment package, using simple indicators that are measurable in low-resource settings, e.g. age, sex, smoking habits, family history of premature cardiovascular disease, presence or absence of diabetes, and presence or absence of hypertension. This pragmatic risk stratification system may not be highly accurate, but it is the only feasible method of ranking people into low-risk and high-risk groups, in order to make treatment decisions in low-resource settings.

**The WHO cardiovascular risk management package**

This package has been designed for the assessment and management of cardiovascular risk in individuals with elevated blood pressure detected through opportunistic screening. Diabetes or smoking may also be used as entry points. The package is aimed at health care providers serving in outpatient facilities, particularly at primary and secondary health care levels. These include non-physician health workers, practitioners of traditional medicine and physicians. A
training manual provides instruction in the use of the package, where necessary, as well as simple information and advice for patients so that they can help to manage their own cardiovascular risk.

A basic health care infrastructure is necessary before the risk management package can be used, so that people at varying risk levels can be identified and appropriate treatment given. There must be facilities for opportunistic blood pressure screening, personnel must be trained to measure blood pressure appropriately, reliable blood pressure measuring devices must be available, and a quality control system must exist. Basic treatment and referral pathways must be available for those who are diagnosed as having hypertension and/or diabetes. Again, this requires adequately trained personnel and a regular supply of appropriate drugs. These requirements may not be completely fulfilled in all settings, so a concerted effort must be made to upgrade the existing facilities, so that the package can have maximum impact where it is applied.

The package offers a pragmatic risk stratification approach that can serve as a starting-point for health systems in low-resource scenarios, and several countries have already begun to implement this approach in practical clinical settings.

Helping yourself, helping others

Teresa Lander
Freelance journalist, Bristol, UK

In diabetes, perhaps more than in many other chronic conditions, continued good health depends on knowing about the condition and being motivated to live more healthily. The United Kingdom charity for people with diabetes, Diabetes UK, has introduced a number of low-cost self-help schemes designed to help diabetic people to help themselves and others.

“Buddy” scheme befriends the newly diagnosed

The Scottish branch of the charity has introduced a “buddy” scheme, in which volunteers visit people with diabetes in their homes with support and advice on practical matters, such as diet, everyday living, finding their way around local health care services and dealing with the attitudes and preconceptions of others. The service is offered to anyone living with diabetes and their carers, and is completely confidential.

Potential “buddies”, often people with diabetes themselves, receive two days’ training in communication skills and diabetes awareness. They are matched to their partners through a central database with details of age, gender, area of residence, language, ethnicity, type of diabetes, complications, hobbies, etc.

This pilot scheme is currently running in the Scottish regions of Fife, Grampian, Greater Glasgow, Lothian and Tayside and it is hoped to expand it after an evaluation early in 2004. This is a low-cost, grass-roots scheme which could usefully be employed in lower-income countries as a way of sharing experiences and motivating people with diabetes. It could even be used for other conditions such as chronic heart disease. It is important to remember, though, that visits from “buddies” are no substitute for professional medical advice: people with diabetes still need to work closely with their own health care advisers. Contact: Diabetes UK Scotland branch: www.diabetes.org.uk/scotland.

Right from the start: children’s summer camps

Children can’t imagine themselves with heart disease, blindness or kidney problems –these all lie too far in the future to have any relevance for them. And the pressure to do everything the same as...
their friends is difficult to resist. It is particularly important for children with diabetes to learn to eat sensibly and manage their own diabetes from an early age. Diabetes UK organizes annual holidays for around 300 children with diabetes in nine locations around the UK. The children go for a week of sport and fun activities, with education about diabetes mixed in in small and unobtrusive doses (e.g. quizzes or discussions). They learn to manage away from their families, sometimes for the first time ever. But the greatest benefit comes from learning from other children and staff members during blood glucose testing, insulin injections and mealtimes. Charlotta Weihov, Care Support Holiday Manager at Diabetes UK, said, “These camps offer children an opportunity to go away with other children who have diabetes. They learn that they’re not alone and are able to have an activity holiday knowing that full medical support is available for them 24 hours a day.” This is not such a low-cost option. Staff-to-child ratios are necessarily high, owing to the strict child protection legislation in the UK. The cost to the family is £320 (approx. US$545 in November 2003) for a week’s holiday.

Contact: www.diabetes.org.uk

What they say
“My son now takes more responsibility for his diabetes, and maintains excellent blood sugars. It also gave him the opportunity to get away from us for a while, the first time in 14 years.” Parent’s comment
“It is so positive for a teenager with diabetes to meet adult helpers dealing with their own diabetes in such a positive way. This has really brightened my daughter’s outlook for the future.” Parent’s comment
“You will be amazed to notice how much support and confidence children will get through simply being with other children with diabetes and preparing for and planning activities and new challenges”. Diabetes UK. Children’s support holidays 2003: guidelines for volunteer staff.

WHD 2003: a good vintage!
The 2003 World Heart Day was a great success, with 96 country participants from all regions of the world. On 28 September, "Women, Heart Disease and Stroke" was on the world media agenda. The World Heart Day public relations agency estimates the total circulation (press, TV, radio and online contact) at 300 million. The media reach was greatly improved over World Heart Day 2002, when the circulation was “only” 133 million, using the same calculation methodology.

The increased interest in World Heart Day is also clear in the number of hits on our website: 150,000 the first year (2000), over one million last year and over two million this year.

WHF marketing materials (poster and leaflet) were well used, being translated and adapted to local needs by many WHF country members. The press resources proved useful, since country members worked more actively with the press this year.

World Heart Day received more WHO support, receiving a mention on the front page of all WHO websites. Elsevier Publishing donated advertising for World Heart Day in its 10 medicine and cardiovascular journals.

It is encouraging to see that World Heart Day is generating more and more enthusiasm among our partners.

The next World Heart Day, on 26 September 2004, will focus on "Children, Adolescence and Heart Disease".

World Heart Day website: www.worldheartday.com
The World Heart Federation is made up of 173 member societies of cardiology and heart foundations from 100 countries, as well as continental members covering the regions of Asia-Pacific, Europe, the Americas and Africa.

There are five different categories of membership: national, national associate, continental, international associate and individual. International or national scientific societies or foundations devoted to specific aspects of prevention and control of heart disease and stroke, or other international or national organizations with aims similar to those of the World Heart Federation may apply for membership, or be invited by the WHF Board to apply.

The World Heart Federation has recently welcomed seven new members:

- African Heart Network (Continental Member)
- Foundation of Health and Heart, Republic Srpska, Bosnia and Herzegovina (National Member)
- Emirates Cardiac Society, United Arab Emirates (National Member)
- Heart Foundation Cardiac Centre, Mauritius (National Member)
- Foundation for Lay Education on Heart Diseases, Philippines (National Associate Member)
- Macau Association of Cardiology, Macau (National Associate Member)
- Foundation of Health and Heart, Republic Srpska, Bosnia and Herzegovina (National Member)
- Emirates Cardiac Society, United Arab Emirates (National Member)
- Heart Foundation Cardiac Centre, Mauritius (National Member)
- Foundation for Lay Education on Heart Diseases, Philippines (National Associate Member)
- Macau Association of Cardiology, Macau (National Associate Member)

Join the World Heart Federation

World Heart Day 2004 focuses on children

The next World Heart Day will be held on 26 September 2004. The theme is "Children, Adolescence and Heart Disease". Two topics, tobacco and obesity, which are major threats to children's health, will be stressed throughout the year.

Tobacco is an important issue, particularly in developing countries where the tobacco industry develops marketing strategies targeting children and adolescents, and we will emphasize this topic in our material. Information on obesity, which now affects more and more children worldwide, will be included in order to increase public awareness and action on this issue.

The printed material (press releases, fact sheets, World Heart Day leaflet, etc.) will focus on the two key issues.

The first World Heart Day meeting of 2004 will be held during the American College of Cardiology Congress in New Orleans on 7 March (12:00-13:30).

The theme for World Heart Day in 2005 will be "Obesity".

WHO publishes MONICA study on World Heart Day

On World Heart Day, 28 September, the World Health Organization (WHO) published the results of the largest-ever worldwide collaboration to study heart disease: the MONICA (MONitoring CaRdiovascular disease) Monograph and Multimedia Sourcebook. The launch of the Monograph is the culmination of a major research project, conceived in 1979, in which teams from 38 populations in 21 countries studied heart disease, stroke and associated risk factors from the mid-1980s to the mid-1990s - the largest such collaboration ever undertaken.

MONICA was important in measuring levels and trends over time in these diseases and their risk in different populations. It has served to precipitate and monitor prevention policies in different countries, demonstrating the importance of the new acute and long-term treatments that have been introduced.

This publication is designed for a wide readership - from the general public to journalists, students and medical specialists - interested in heart disease, stroke, lifestyle, risk factors, public health policy and epidemiology. It should stimulate health workers and administrators in different countries to think like epidemiologists on a global scale and to collaborate in tackling other similar challenges to world health.

WHO cardiovascular disease programme:
www.who.int/ncd/cvd/index.htm.
Macau (China) (National Associate Member)
- Dr Vang Chu, Deputy Head, Division of Medicine, Mahosot Hospital, Vientiane, Laos (Individual Member)

The World Heart Federation offers members:
- the opportunity to join this global, active advocacy network
- the latest information on WHF/WHO partnership and risk factor strategies
- the World Heart Day CD-ROM, including extensive marketing materials for adaptation to local needs
- World Heart Day newsletters
- Heartbeat, a quarterly newsletter informing members of the latest developments in prevention
- regular press releases (some translated into French, Chinese, Russian, Spanish and Arabic) to be used freely in your local press
- P.D. White research fellowships for heart foundations
- Twin Centres fellowship for cardiac societies and heart foundations
- invitations to foundation training programmes attached to the World Congress of Cardiology and other congresses
- invitations to open meetings of the World Heart and Stroke Forum (usually once a year)
- an outlet for details of your forthcoming congresses at the World Heart Federation stand at congresses of the American Heart Association, the American College of Cardiology and the European Society of Cardiology
- regular information about the Framework Convention on Tobacco Control (FCTC), and WHO’s diet, nutrition and physical activity strategies
- voting rights at the General Assembly for national and continental members
- membership directory (including addresses, telephone numbers, email addresses and names of office-holders) for easy exchanges of information and networking.

Please contact Carola Adler (carola.adler@worldheart.org) for further information about World Heart Federation membership.

Leadership for Change

Judith A. Oulton
Chief Executive Officer,
International Council of Nurses

The International Council of Nurses (ICN) is a federation of national nurses’ associations representing nurses in over 125 countries. Founded in 1899, ICN is the world’s first and widest-reaching international organization for health professionals. ICN’s mission is to represent nursing internationally and influence health policy worldwide. Operated by nurses and for nurses, ICN works to ensure quality nursing care for all, sound health policies globally, the advancement of nursing knowledge and the presence worldwide of a respected nursing profession and a competent and satisfied nursing workforce. ICN advances nursing, nurses and health through its policies, partnerships, advocacy, networks, congresses, special projects and leadership development, and by its work in the arenas of professional practice, regulation and socioeconomic welfare.

In 1995, ICN developed the Leadership for Change (LFC) programme to develop nurses and other health care professionals as effective leaders and managers in a constantly changing health environment. The LFC programme is a tested methodology based on action learning and designed to prepare nurses to participate fully in health planning, policy and management.

LFC has five interrelated programme components: workshops, individual development planning, team projects,
structured learning activities between workshops and mentoring. This basic methodology has proven effective in all environments and remains the same, even when programme content and structure are adapted to meet different countries’ needs.

Since its inception, the LFC programme has been offered in more than 50 countries. Many of these are now implementing LFC by accredited trainers through the “Training of Trainers” (TOT) programme, which was launched in 2002. TOT programmes have been implemented in 15 countries.

History of the LFC programme

The first LFC programmes began in 1996 with sponsorship from the W.K. Kellogg Foundation, and involved five countries in the Caribbean and five in Latin America. W.K. Kellogg also sponsored a second phase from 1998 to 1999, which extended the LFC programme to an additional 16 countries in the Caribbean and Latin America.

In 1998, a number of new programmes were launched in different regions of the world: between 1998 and 2001, LFC was implemented in 14 countries in Eastern, Central and Southern Africa through the sponsorship of the East, Central and Southern African College of Nursing (ECSACON) and the United States Agency for International Development (Nairobi office). And early in 1998, a programme was implemented in five countries in the South Pacific, sponsored by the New Zealand Government. In 1999, LFC began in Singapore.

Beginning in 2000, ICN, the World Health Organization (WHO) and national governments began collaborating to offer LFC in Bangladesh. This was followed in 2001 and 2002 with new programmes in Myanmar, United Arab Emirates and Nepal. ICN and WHO collaboration is continuing, with new programmes for Saudi Arabia and Yemen, which began in October 2003, and for Vietnam and Mongolia beginning February 2004.

Evaluation of the LFC programme

ICN conducted an evaluation study of LFC during 2001 and 2002, focusing on impact and sustainability. Findings indicate significant positive results, especially at the level of individual development. A final component of the evaluation, which is due to commence in 2003, is a longitudinal study of participants who have completed the programme.

Other LFC products and initiatives

The LFC programme has several communication products, such as the Leadership Bulletin, a marketing brochure and a web page (www.icn.ch/leadchange.htm), dedicated to the LFC programme.

ICN also recently launched the Leadership for Change Network. The LFC Network will provide ongoing support for LFC graduates and others interested in implementing the LFC and TOT programmes.

If you would like to learn more about these programmes or become a member of the LFC network, contact: Dr Stephanie Ferguson, ICN Consultant for Nursing and Health Policy and LFC Programme Director, tel. (+41) 22 908 01 00, email: ferguson@icn.ch.

The International Council of Nurses is a federation of 125 national nurses’ associations representing millions of nurses worldwide. Operated by nurses for nurses, ICN is the international voice of nursing and works to ensure quality care for all and sound health policies globally.

Tobacco control - the fight goes on

The World Heart Federation warmly commends the World Health Organization on the unanimous adoption of the Framework Convention on Tobacco Control by the World Health Assembly in May 2003. As at 3 December 2003, 78 States have signed the Convention and five (Fiji, Malta, Norway, Seychelles and Sri Lanka) have ratified it. The Convention cannot enter into force until 40 instruments of ratification have been received. It is important that the enormous momentum generated so far should not be lost. Please help by lobbying your government to sign and ratify the Convention.

The Framework Convention Alliance (FCA@globalink.org), an international grouping of nongovernmental organizations, has prepared a “Ratification Planning Guide” and other advocacy materials for this purpose. The guide tells you how to target key decision-makers, creating a message which speaks to both the “brain” and the “heart” of your chosen target audience, and how to harness the power of the media in support of this vital cause. There is also a full list of the officials to contact in each country.

The guide is available online at: http://fctc.org/sign_rat/ratificationguide.shtml
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Forthcoming meetings

2004

- **Jan 14-17, Singapore**: 14th Asian-Pacific Congress of Cardiology (Singapore Cardiac Society, Level 3, Mount Elizabeth Hospital, Singapore 228510, fax: +65 735 3308), admin@14apcc.com
  www.14apcc.com

- **Jan 22-23, Manila, Philippines**: 4th Convention on Preventive Cardiology (fax: 63 2 632 1612; nobello@info.com.ph)


- **Feb 15-19, Sao Paulo, Brazil**: 20th Scientific Meeting of the International Society of Hypertension.
  www.hypertension2004.com.br

- **Feb 23-27, Cancún, Mexico**: 9th Annual Cardiology at Cancún (American College of Cardiology, www.acc.org)

- **Feb 27-29, Katmandu, Nepal**: 2nd Biennial South Asian Cardiac Congress of SAARC Cardiac Society and Cardiac Society of Nepal.
  (email: csosf nepal@hotmail.com, www.walkersandhikers.com/cardiology)

- **Mar 3-6, San Francisco, USA**: 44th Annual Conference on Cardiovascular Disease Epidemiology and Prevention featuring the L.J. Filer Symposium on Prevention of Overweight and its Consequences Beginning in Youth. (email: scientific-conferences@heart.org)

- **Mar 6, New Orleans, USA**: Heart Disease in Women - Where are We Now? (American College of Cardiology, www.acc.org)

- **Mar 7-10, New Orleans, USA**: ACC 2004, Crossing Borders in Cardiovascular Medicine (American College of Cardiology)

- **Mar 26-27, Miami, FLA, USA**: Current Evaluation and Management of Extracranial Carotid Disease: The Status of Carotid Stenting (ACC - Florida Chapter - tel: +1 800 253 4636, ext. 694)

- **Apr 2-4, Nice, France**: 3rd European Conference on Management of Coronary Heart Disease (tania@makallengroup.com, www.mahcarevents.co.uk)

- **Apr 4-6, Singapore**: Second Asian Pacific Congress of Heart Failure (Secretariat email: sandrakoh@mpgroupasia.com)

- **April 26-30, Melbourne, Australia**: 18th World Conference on Health Promotion and Health Education.

- **May 7-10, Antalya, Turkey**: VIII World Congress of Echocardiography and Vascular Ultrasound, venue to be confirmed (Navin C. Nanda, MD, President, International Society of Cardiovascular Ultrasound, P.O. Box 323, Gardendale, AL 35071, USA, fax: +1 205 934 6747), iscu@iscu.org, www.iscu.org

- **May 15-17, Washington DC, USA**: 5th Scientific Forum on Quality of Care and Outcomes Research in Cardiovascular Disease and Stroke (email: scientific-conferences@heart.org)

- **May 22-26, Rome, Italy**: 21st World Congress of the International Union of Angiology (Dr Salvatore Novo, Via Sardegna 76, I-90144 Palermo, Italy, fax: +39 091 655 29 62).

- **May 23-26, Dublin, Ireland**: 8th World Congress of Cardiac Rehabilitation and Secondary Prevention (ICC Concepts, 3 Kingram Place, Fitzwilliam Place, Dublin 2, fax: +353-1 676 90 88, e-mail: info@icc-concepts.com, www.iccconcepts.com)

- **June 7-9, Columbia River Gorge, Stevenson, Washington, USA**: 14th Congenital Heart Disease in the Adult: a Combined International Symposium (ACC)

- **June 17-19, Venice, Italy**: 50th Annual Meeting of the Scientific and Standardization Committee (fax: 1 919 929 3935)

- **July 17-20, Vancouver, Canada**: 4th Congress on Heart Disease - New Trends in Research, Diagnosis and Treatment of the International Academy of Cardiology (www.cardiologyonline.com)

- **Aug 28-Sept 1, Munich, Germany**: European Society of Cardiology Annual Congress (www.escardio.org).

- **Oct 1-3, Hong Kong**: 1st Conference on Cardiovascular Clinical Trials and Pharmacotherapy (www.cctap.com).

- **Dec 10-12, New York, NY, USA**: 37th Annual New York Cardiovascular Symposium (ACC)

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- **May 22-25, Iguassu, Brazil**: Sixth International Conference on Preventive Cardiology (email: prcardio2005@congresosint.com.ar; www.congresosint.com.ar/prcardio2005)

- **Aug 5-13, Sydney, Australia**: XXth Congress of the International Society on Thrombosis and Haemostasis with 51st Annual SSC Meeting (http://www.isth2005.com)