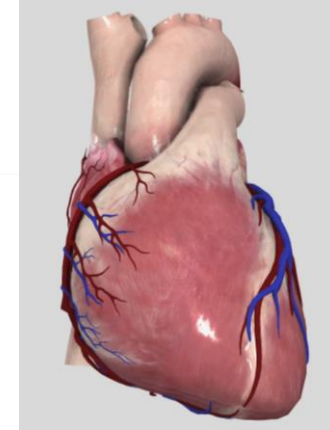




Hôpitaux
Universitaires
Genève



CARDIOVASCULAR DISEASE

THE WORLD'S NUMBER 1 KILLER

Cardiovascular diseases are a group of disorders of the heart and blood vessels, commonly referred to as **heart disease** and **stroke**.



18.6 deaths every year from CVD
MILLION



33%

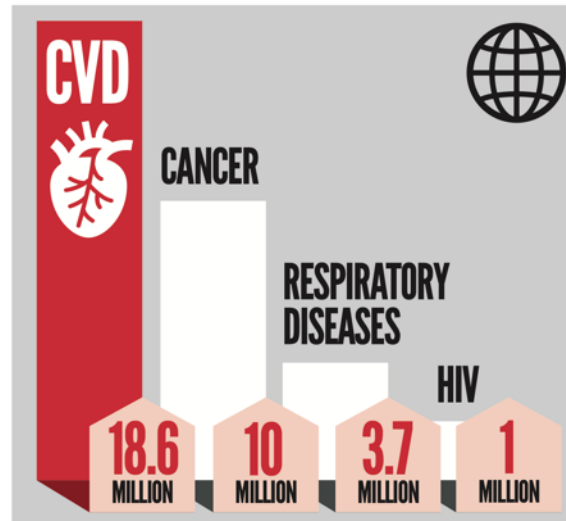
of all global deaths



>75%

of CVD deaths take place in low- and middle-income countries

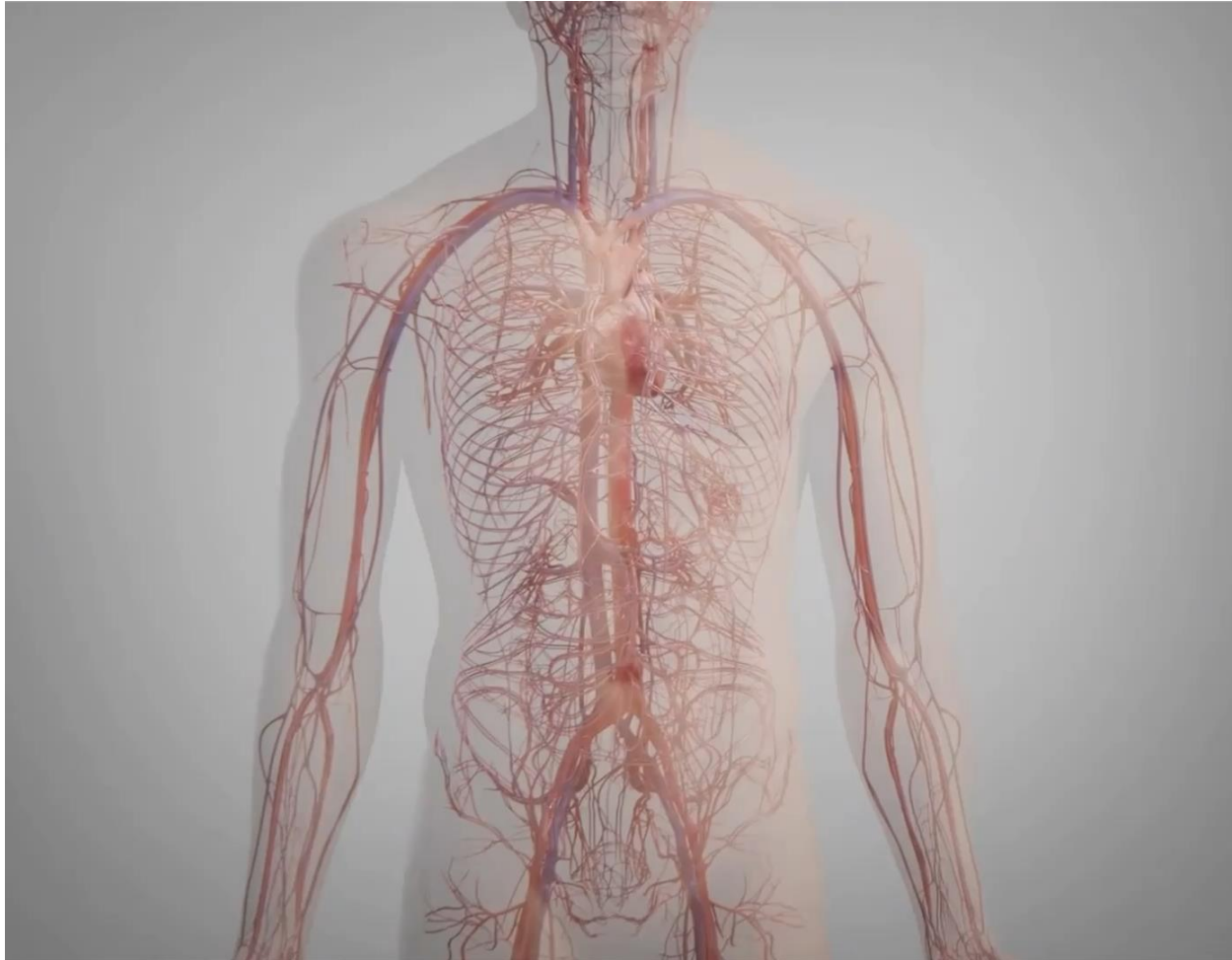
GLOBAL CAUSES OF DEATH



Journée du cœur 2023
Christoph Huber, CCV HUG

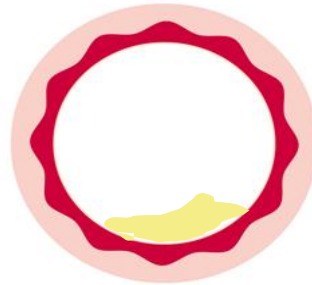
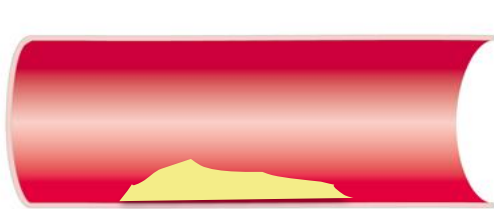


Atherosclerosis

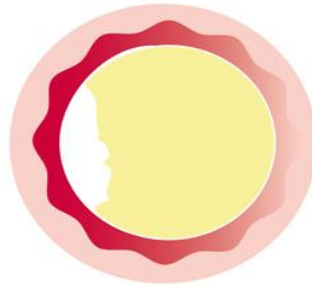
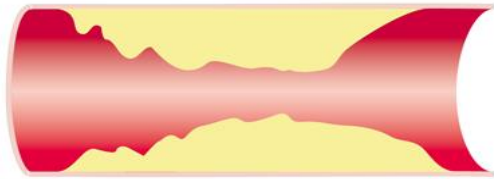




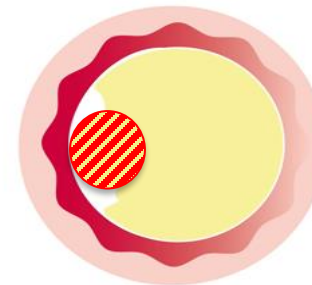
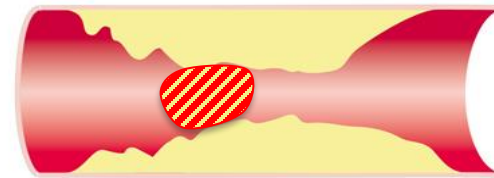
From stenosis to occlusion



No symptoms
stealth mode



Stable
symptoms



Infarction

HUG CARDIOVASCULAR CENTER (CV-Center)



n° 21 Octobre Décembre 2022 / Réseau de santé / Abonnement & newsletter / Impressum / **HUG** Hôpitaux Universitaires Genève

Pulsations

Recherche par mots-clés



2020

Actualité

OCTOBRE 2021
TEXTE: CLÉMENTINE FITAIRE
PHOTOS: ISTOCK

« Dès le début, j'ai été pleinement intégré aux décisions »

Faire bénéficier les patient-es des investigations diagnostiques et des traitements nécessaires dans les meilleures conditions et délais, voici la mission du Centre cardiovasculaire.



MISSION of the HUG CV-Center



The HUG Cardiovascular Center is a center of excellence

The CVC ensures the best care by adapting to the individual patients needs and conditions.

All medical decision are following scientific recommendations and best medical practice guidelines and are based on multidisciplinary expertise supported by the academic and university environment at HUG.

Decision-making and rapid intervention are ensured by the 24/7 presence of the center's doctors.

The CVC multidisciplinary team meetings are open to all doctors who wishes to discuss and present a patient: including all HUG doctors and private GP, cardiologists and angiologists as well as to the medical team @CERN



Journée du cœur 2023
Christoph Huber, CCV HUG



UNIVERSITÉ
DE GENÈVE

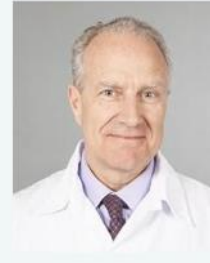


COMITEE of the HUG CV-Center



Pr Christoph Huber

Chef du centre cardiovasculaire
et
Médecin-chef du Service de
chirurgie cardiovasculaire



Pr François Mach

Médecin-chef du Service de
cardiologie

&TEAMS



Pr Marc Righini

Médecin-chef du Service
d'angiologie et d'hémostase



Pr Pierre-Alexandre Poletti

Médecin-chef du Service de
radiologie

Case Manager : Maryam Drame Drammeh

Secrétariat : Evelyne Omezere, [+41 \(0\)22 372 72 16](tel:+41223727216), evelyne.omezere@hcuge.ch



HUG CARDIOVASCULAR CENTER



INFO

Les colloques multidisciplinaires portent sur :

- ▶ les maladies des artères des membres inférieurs (lundi)
- ▶ les sténoses carotidiennes et le foramen ovale perméable (mardi)
- ▶ les maladies cardiaques pédiatriques (mercredi)
- ▶ la cardio-chirurgie - *Heart Team* (jeudi)
- ▶ les cas complexes (chaque 2^e lundi du mois).

Activities and Collaborations of the HUG CARDIOVASCULAR CENTER



**Journée mondiale
du cœur**

L'innovation au
cœur de la santé
cardiovasculaire

**Vendredi
29 septembre
2023**

Ateliers, dépistage
et conférences
Entrée principale HUG,
de 10h à 17h

**CHARGÉ
MINUTE COMPTE!
144**



HUG Hôpitaux
Universitaires
Genève

**WORLD
HEART
FEDERATION**

SAVE A LIFE

Fondation
privée des
HUG

[https://www.lemanbleu.ch/fr/
Emissions/107676-AVC-et-
sante-cardiovasculaire.html](https://www.lemanbleu.ch/fr/Emissions/107676-AVC-et-sante-cardiovasculaire.html)



Journée du cœur 2023
Christoph Huber, CCV HUG



**UNIVERSITÉ
DE GENÈVE**

<https://www.hug.ch/centre-cardiovasculaire-hug>



The screenshot shows a web browser window with the URL <https://www.hug.ch/centre-cardiovasculaire-hug>. The browser's address bar is highlighted. Below the address bar is a navigation bar with social media icons (Facebook, Twitter, YouTube, LinkedIn, Instagram), a 'CONTRASTE' button, a 'CONTACT' button, a language dropdown set to 'FRANÇAIS', and two red buttons: 'APPELER LE 144' and 'SERVICES D'URGENCES'. The main navigation menu includes 'HUG Hôpitaux Universitaires Genève', 'PATIENTS & VISITEURS', 'PROFESSIONNELS DE SANTÉ', 'RECHERCHE & FORMATION', and 'LES HUG'. A search bar is located on the right side of the navigation menu. The main content area features a light blue box on the left with the text 'PATIENTS & VISITEURS' and a large heading in the center: 'CENTRE CARDIOVASCULAIRE DES HUG'.



Journée du cœur 2023
Christoph Huber, CCV HUG



UNIVERSITÉ
DE GENÈVE

Private Ward of HUG



<https://www.divisionprivee-hug.ch/en>

Home SERVICES EXPERTISE THE TEAM EQUIPMENT YOUR STAY Search

PRIVATE DIVISION

An exclusive and fully personalized service for our most demanding patients



WELCOME

At the heart of the Geneva University Hospitals (HUG), we offer the excellence of academic medicine combined with the comfort of a five-star hotel.

Our Private division guarantees you access to therapies and treatments at the cutting edge of medical research and premium hotel services. Our Private division is an integral part of HUG, Switzerland's leading university hospital.

PRACTICAL INFORMATIONS

Address :
Hôpitaux universitaires de Genève
Division privée
Rue G.-Perret-Gentil 4
1205 Genève

Reception : +41 22 372 81 97
Division.Privee@hcuge.ch



What's missing?



Listen to your 



Heart disease in women

The New York Times

Why Heart Disease in Women Is So Often Missed or Dismissed

New research shows that women may not realize their symptoms point to heart trouble, and that medical providers aren't picking up on it either.

Share full article



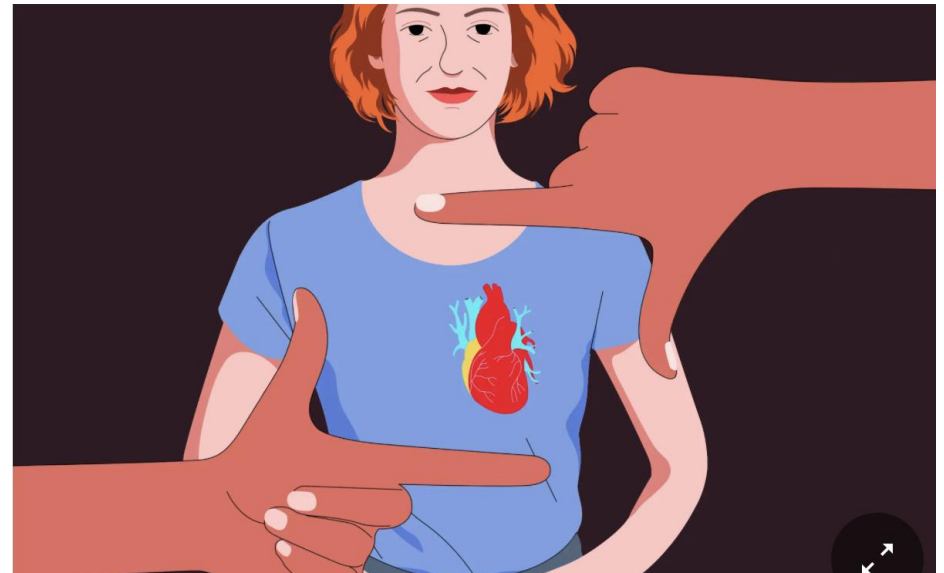
734



By **Anahad O'Connor**

May 9, 2022

<https://www.nytimes.com/2022/05/09/well/live/heart-disease-symptoms-women.html>





Listen to your 

- Chest pain/oppression
- Shortness of breath
- Dizziness and loss of consciousness
- Palpitations
- Fatigue & lower limb oedema



Seek specialized medical advice



Listen to your

Discomfort or tingling in arms, back, neck, shoulder or jaw



Sudden dizziness



Heartburn-like feeling

Most common IN MEN...

Watch for

THE SIGNS

Additional symptoms, most common IN WOMEN...



Cold sweat

Chest pain



Shortness of breath



Nausea or vomiting



Unusual tiredness

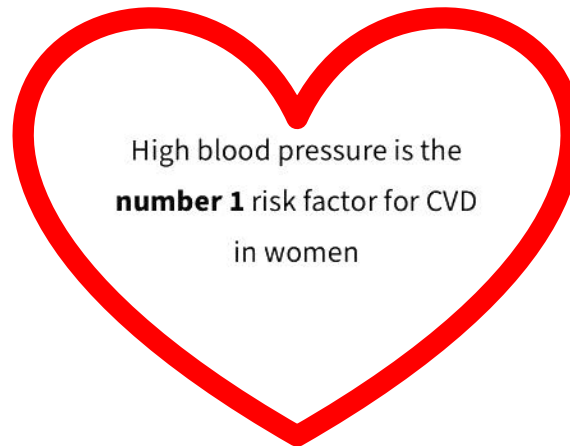


Cardiovascular disease is the leading cause of death in women worldwide

Cardiovascular disease (CVD) is the leading cause of death in women worldwide.

Women with CVD continue to be under-diagnosed and under-treated due to misconceptions and lack of awareness among both patients and doctors.

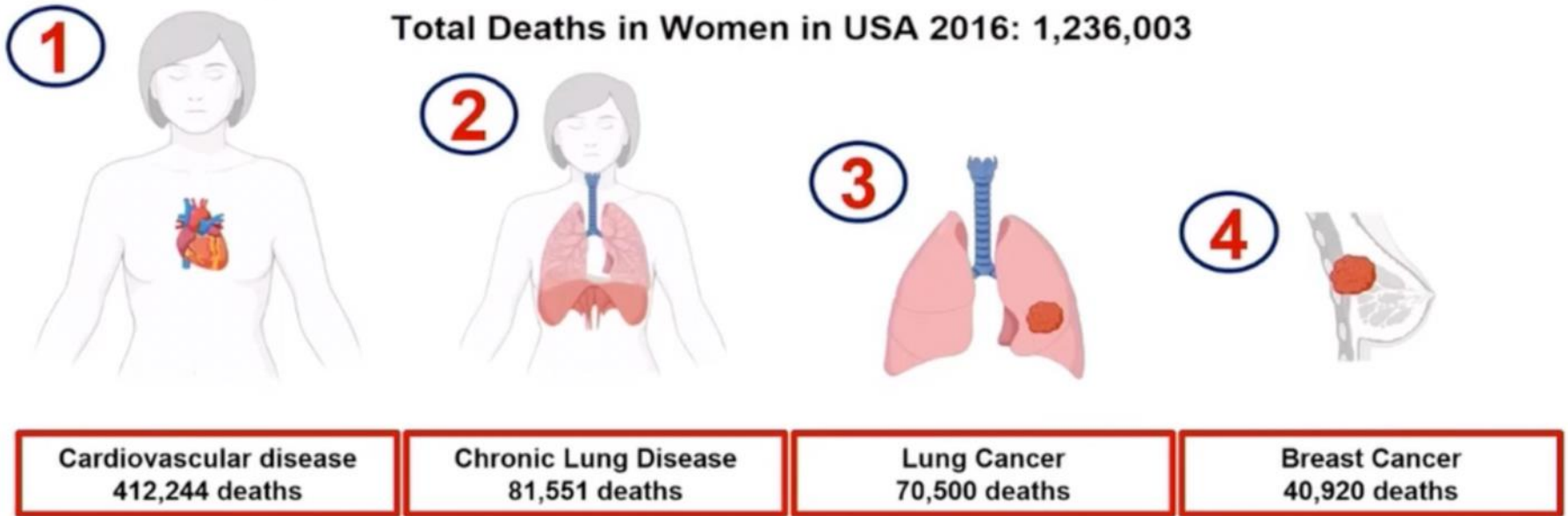
Young women are more likely to die following a heart attack than young men.





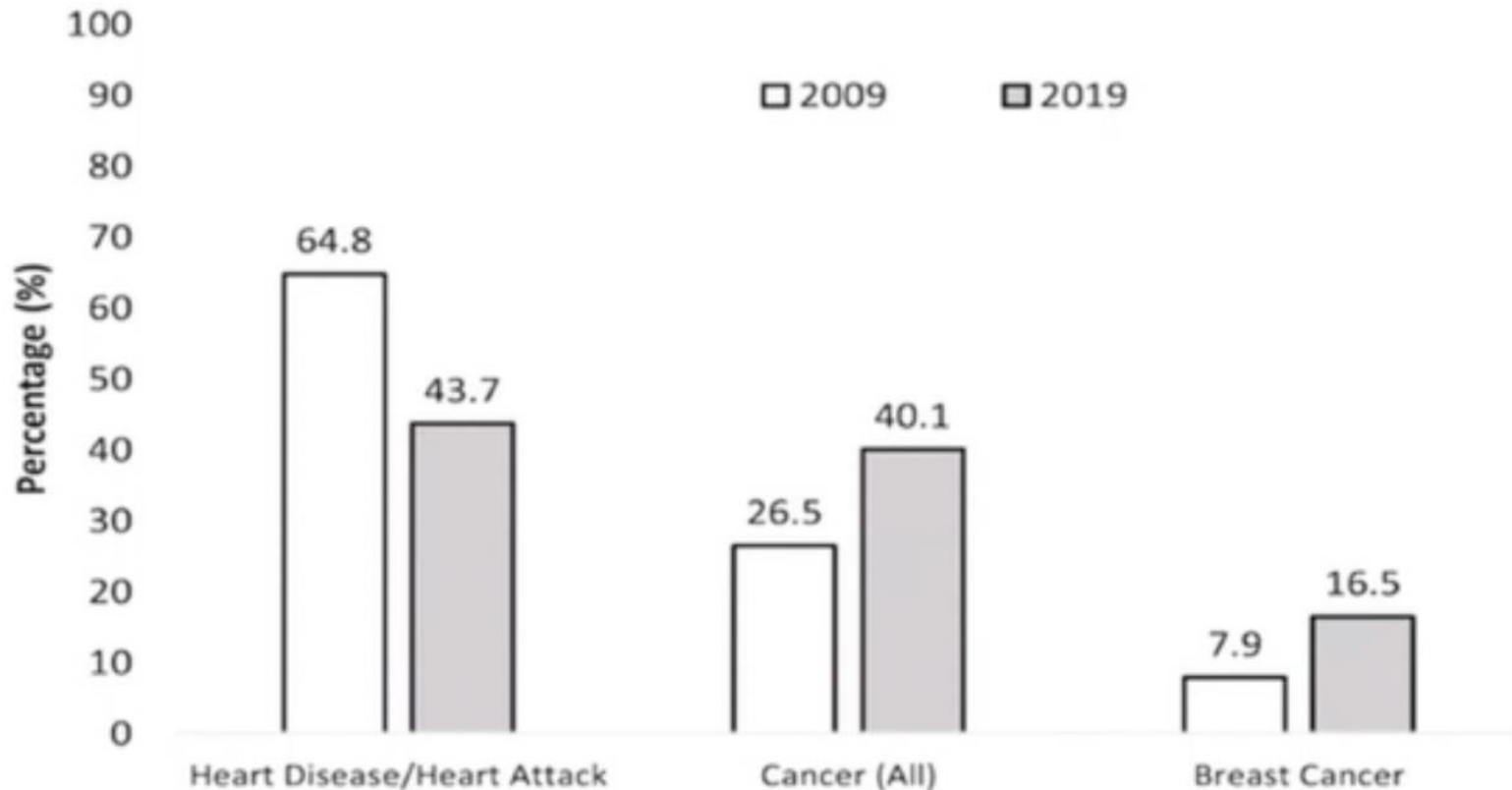
Cardiovascular disease is the leading cause of death in women worldwide

Total Deaths in Women in USA 2016: 1,236,003





Lack of cv risk awareness in women and awareness is further diminishing

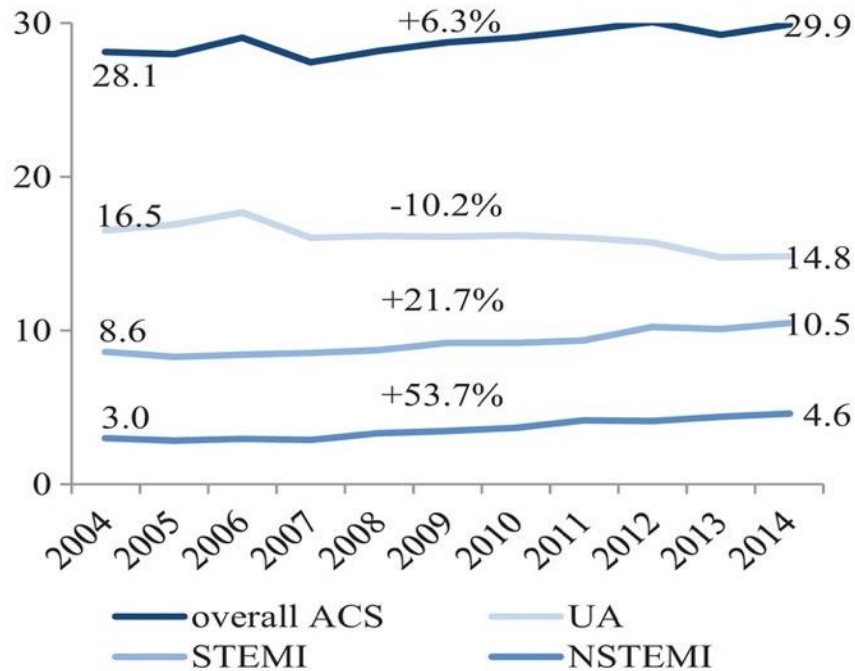


Benjamin EJ, Muntner P, Alonso A; American Heart Association Council on Epidemiology and Prevention Statistics Committee and Stroke Statistics Subcommittee. Heart Disease and Stroke Statistics-2019 Update: A Report From the American Heart Association. *Circulation*. 2019 Mar 5;139(10):e56-e528.



Increase of myocardial infarction in french women of less than 65 years of age

A Among French women aged under 65 years

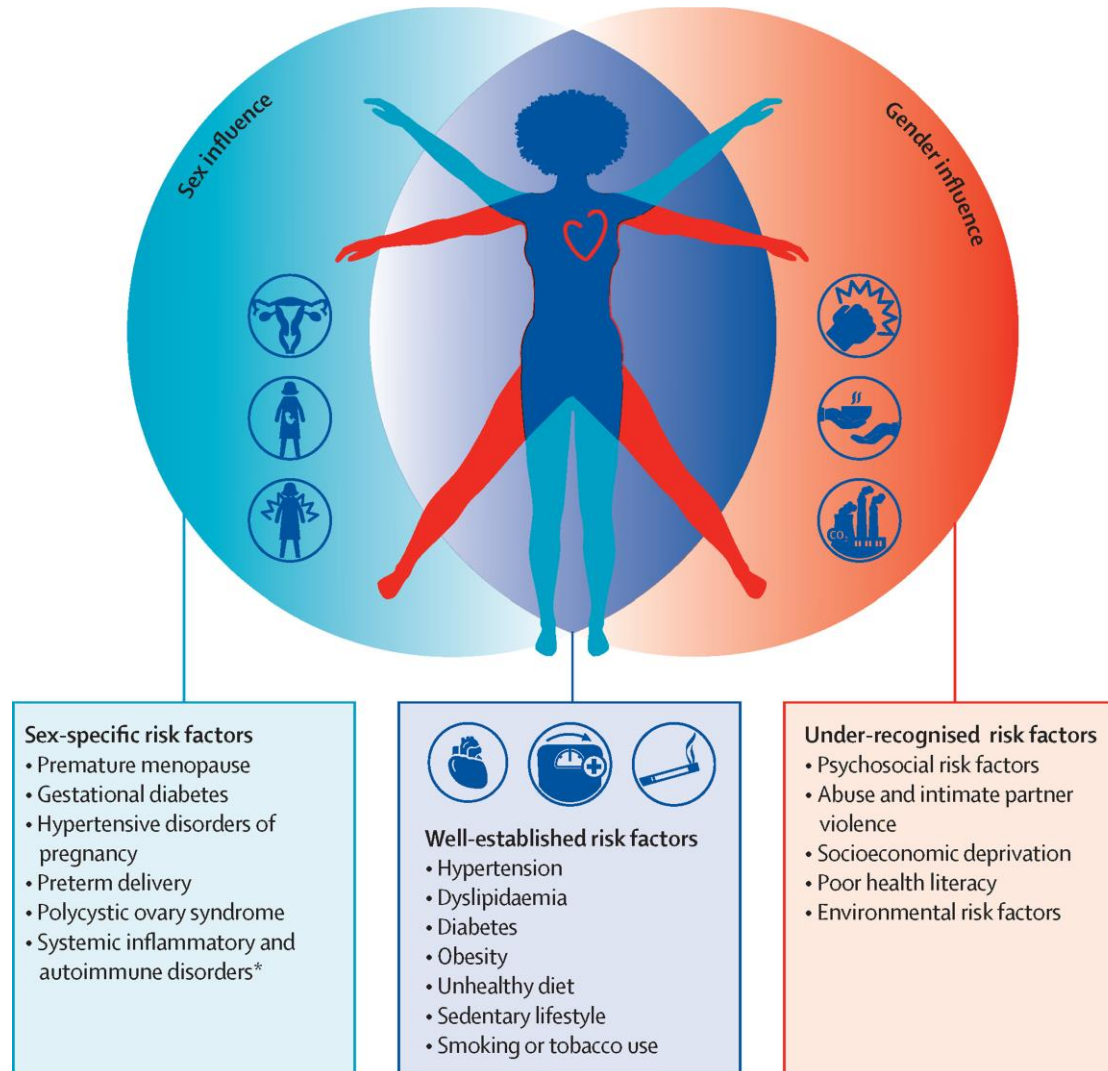


Highest increase observed in women between 45 and 65 years (+1.7%/year)

Gabet A, Danchin N, Juillière Y, Olié V. Acute coronary syndrome in women: rising hospitalizations in middle-aged French women, 2004-14. Eur Heart J. 2017 Apr 7;38(14):1060-1065.



Lack of cv risk awareness in women








With these steps you can help prevent CVD and reduce your lifetime cardiovascular risk:

- **Maintain a healthy diet:** A balanced and healthy diet that is low in saturated and trans fats, cholesterol, and sodium can help prevent CVD. Include plenty of fruits, vegetables, whole grains, and lean protein in your diet.
- **Exercise regularly:** Regular physical activity can help lower blood pressure, improve cholesterol levels, and reduce the risk of CVD. Aim for at least 150 minutes of moderate-intensity aerobic activity per week.
- **Maintain a healthy weight:** Being overweight or obese increases the risk of CVD. Losing weight through a healthy diet and regular exercise can help reduce this risk.
- **Don't smoke:** Smoking is a major risk factor for CVD. Quitting smoking is one of the best things you can do for your heart health.
- **Manage other health conditions:** High blood pressure, high cholesterol, and diabetes can all increase the risk of CVD. Managing these conditions through medication, lifestyle changes, or both can help reduce the risk.
- **Manage stress:** Chronic stress can contribute to the development of CVD. Managing stress through relaxation techniques, exercise, and other stress-reducing activities can help reduce this risk.
- **Get regular check-ups:** Regular check-ups with your doctor can help identify and manage risk factors for CVD.

By taking these steps to prevent CVD throughout your lifetime, you can significantly reduce your risk of developing this serious and potentially life-threatening condition.

The next quantum leap in Cardiovascular Medicine

The background of the slide is a dynamic digital scene. It features a dark blue to black gradient, overlaid with a dense stream of glowing binary code (0s and 1s) in various shades of cyan and blue. Several bright, multi-colored light trails (red, orange, yellow, and blue) curve across the lower half of the image, creating a sense of motion and depth. The overall aesthetic is high-tech and futuristic, suggesting advanced technology and data processing.

Digitalization to increase patient safety and quality of care



Almost 25% of the US healthcare budget is being wasted due to multiple factors such as lack of coordination, overtreatment or low-value care, complex administrative procedures, and failure to provide care.

• Shrank, W. H., Rogstad, T. L., and Parekh, N. (2019). Waste in the US health care system: estimated costs and potential for savings. *JAMA* 322, 1501–1509.

• doi: 10.1001/jama.2019.13978

• https://www.who.int/health-topics/cardiovascular-diseases#tab=tab_1



An app a day keeps the doctor away



An app a day keeps the doctor away

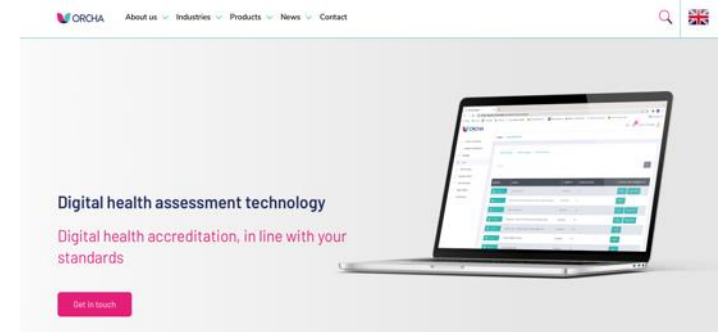
5Mio health app downloads/d

365'000 health app

only 20% meet eligibility criteria's

prescription for health apps instead of drugs?

Data generation by apps and governance – data ownership?



Wearable devices

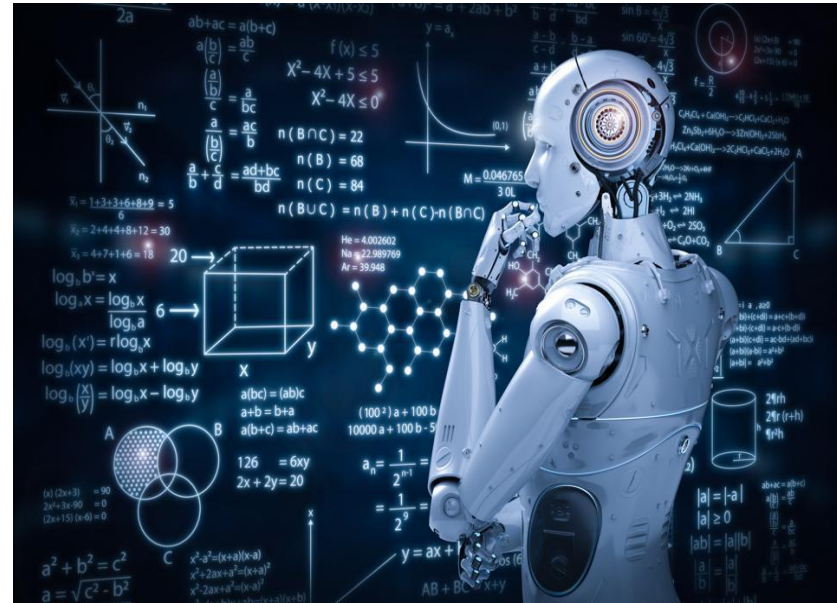


Krittanawong C, Rogers AJ, Johnson KW, Wang Z, Turakhia MP, Halperin JL, Narayan SM. Integration of novel monitoring devices with machine learning technology for scalable cardiovascular management. *Nat Rev Cardiol.* 2021 Feb;18(2):75-91. doi: 10.1038/s41569-020-00445-9.

NN, AI & ML



ATLAS



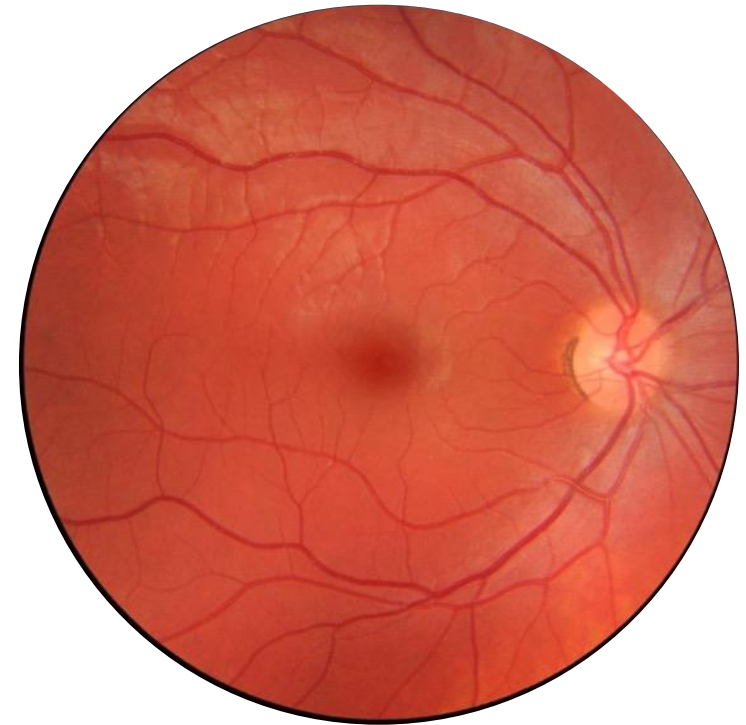


gender

The retina @ AI

The best retina experts have a 50% chance to guess the gender of the patient. With AI the likelihood increases to 98%

AI can diagnose a large variety of early-stage disease like diabetes or artherosclerosis, kidney disease and Alzheimer's disease

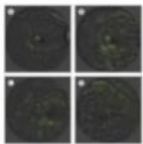


Actual: female
Predicted: female

What the Machine Sees in the Retina

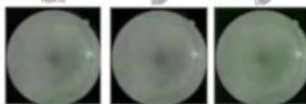


Kidney Disease



A deep learning algorithm to detect chronic kidney disease from retinal photographs in community-based populations
Lancet Digital Health May 12, 2020

Diabetes and Blood Pressure Control



Actual: non-diabetic Predicted: 0.7%
Actual: 148.0 mmHg Predicted: 148.0 mmHg
Actual: 78.0 mmHg Predicted: 88.8 mmHg
Prediction of cardiovascular risk factors from retinal fundus photography via deep learning
March 2018
biomedical engineering

Alzheimer's Disease



A system based on AI will scan the retina for signs of Alzheimer's
AlzEye

Predicting course and intervention for AMD



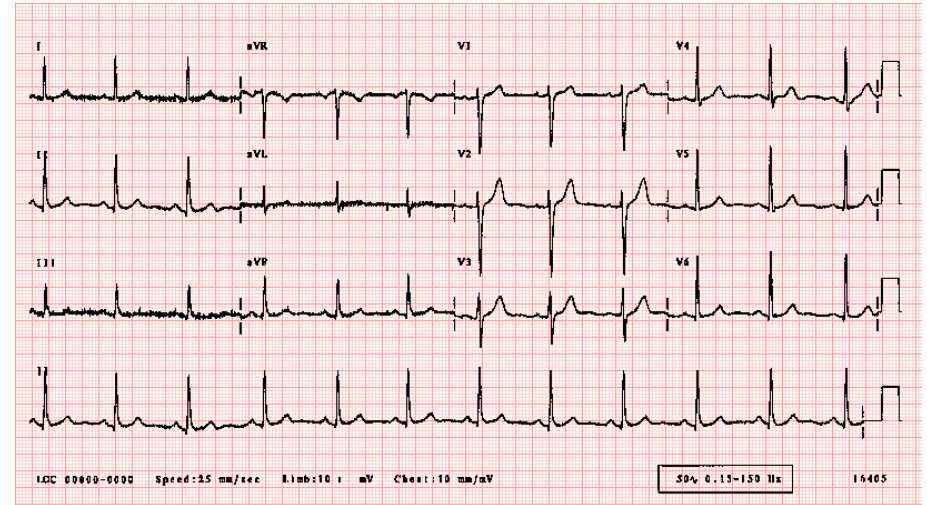
Predicting conversion to wet age-related macular degeneration using deep learning
May 2020
nature medicine




ECG & AI

Cardiologist can diagnose many conditions by reading the ECG like infarction or arrhythmias.


But AI can diagnose heart function, age and sex of the patients or anaemia and much more.



What the Machine Sees in the ECG

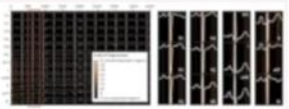


Age and Sex



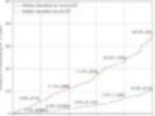
[Circulation: Arrhythmia and Electrophysiology](#)
27 August 2019

Anemia



[Lancet Digital Health 2020; 2: e358-62](#)


Cardiac



[medicine](#)
Atika et al
Jan 2019

Difficult Diagnoses

Automated and Interpretable Patient ECG Profiles for Disease Detection, Tracking, and Discovery



Artificial intelligence assisted acute patient journey



Digital health tec
Tel med
Health monitoring
Wearable devices
Automated alert systems

Digital health tec
Tel med
Health monitoring
Wearable devices
Automated alert systems

AI/ML aided
surgery

Improved use of diagnostic data
Improved clinical documentation

Continuous
clinical
monitoring





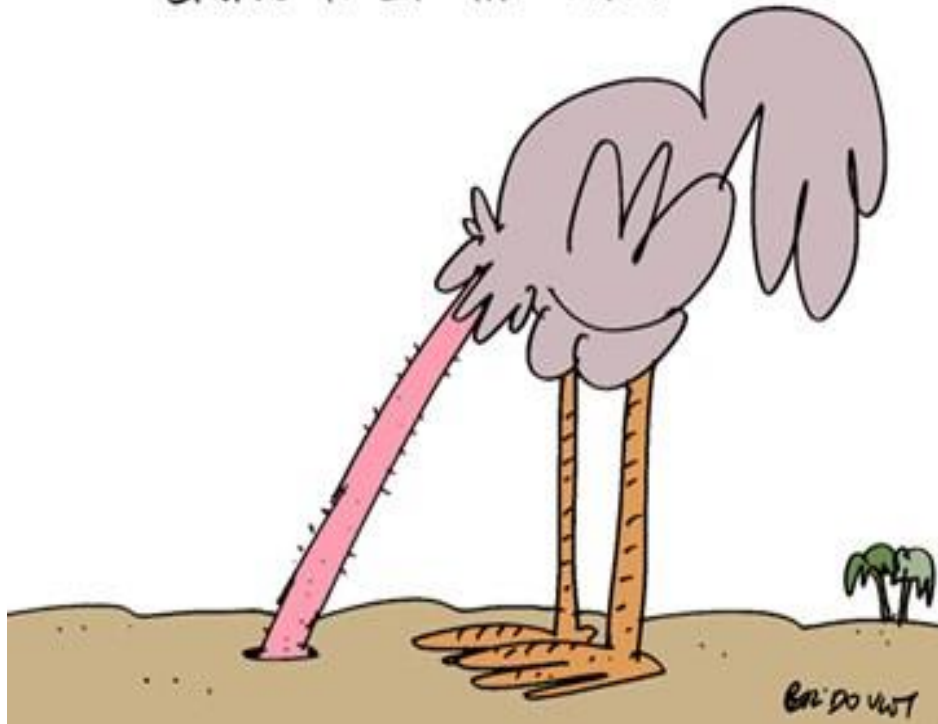
Save a Life – app – Swiss emergency responders association





No comments

JEU: UNE AUTRUCHE EST CACHÉE DANS CE DESSIN!
SAURAS-TU LA TROUVER!??





Take care of your heart health





Evènements HUG



SAVE A LIFE



WORLD HEART FEDERATION



Journée du cœur 2023
Christoph Huber, CCV HUG



UNIVERSITÉ DE GENÈVE



World Heart Day 29th September 2023 @ HUG



Created by the [World Heart Federation](#), World Heart Day informs people around the globe that CVD, including heart disease and stroke, is the world's leading cause of death claiming **18.6 million lives each year**, and highlights the actions that individuals can take to [prevent](#) and control CVD. It aims to **drive action to educate people** that by controlling [risk factors](#) such as [tobacco use](#), [unhealthy diet](#) and physical inactivity, at least 80% of premature deaths from heart disease and stroke could be avoided.



Journée du cœur 2023
Christoph Huber, CCV HUG



UNIVERSITÉ
DE GENÈVE