

# Complementary Medicine in Cardiovascular Disease

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# Objectives

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Describe the role of complementary and integrative medicine in heart disease

Describe the different modalities and which one are really effective and evidence based

Diet and exercise

Functional foods

Herbal medicine

Aromatherapy

Relaxation techniques



# The National Center for Complementary and Integrative Health (NCCIH)

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# How Interested Are Americans in CAM?

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38% of all adults and 12% of all children using CAM therapy

34 Billion dollars spent annually

CAM use among adults is greatest among women and those of middle age

Better educated and have higher incomes

CAM therapy used in many countries



# Cardiovascular disease (CVD)



## Physical Inactivity



Every morning my brain tells me to exercise...

..... and my body laughs at the idea



600,000 deaths each year or 1 in 4 Americans

# 1 cause of death

Coronary heart disease kills over 400,000 each year and cost billions of dollars

Risk factors for CVD include hypertension, high LDL-cholesterol, smoking, diabetes, overweight and obesity, poor diet, physical inactivity, and excessive alcohol use

CAM use has mainly focused on herbal remedies and dietary supplements



# Cardiology Outpatient Clinic at Mayo Clinic

17-question survey (1755 patients) about basic medical information and previous use and interest in the future use of dietary supplements and other CAM interventions

A diagnosis of coronary artery disease was implied if 1 of the following 5 questions were checked:

- 1. Do you suffer from angina pectoris?
- 2. Have you had an angioplasty?
- 3. Have you had heart stents placed?
- 4. Do you have chest pain for which you take nitroglycerin tablets under your tongue?
- 5. Have you ever had heart bypass surgery?

Results as follows



# Use of dietary supplements

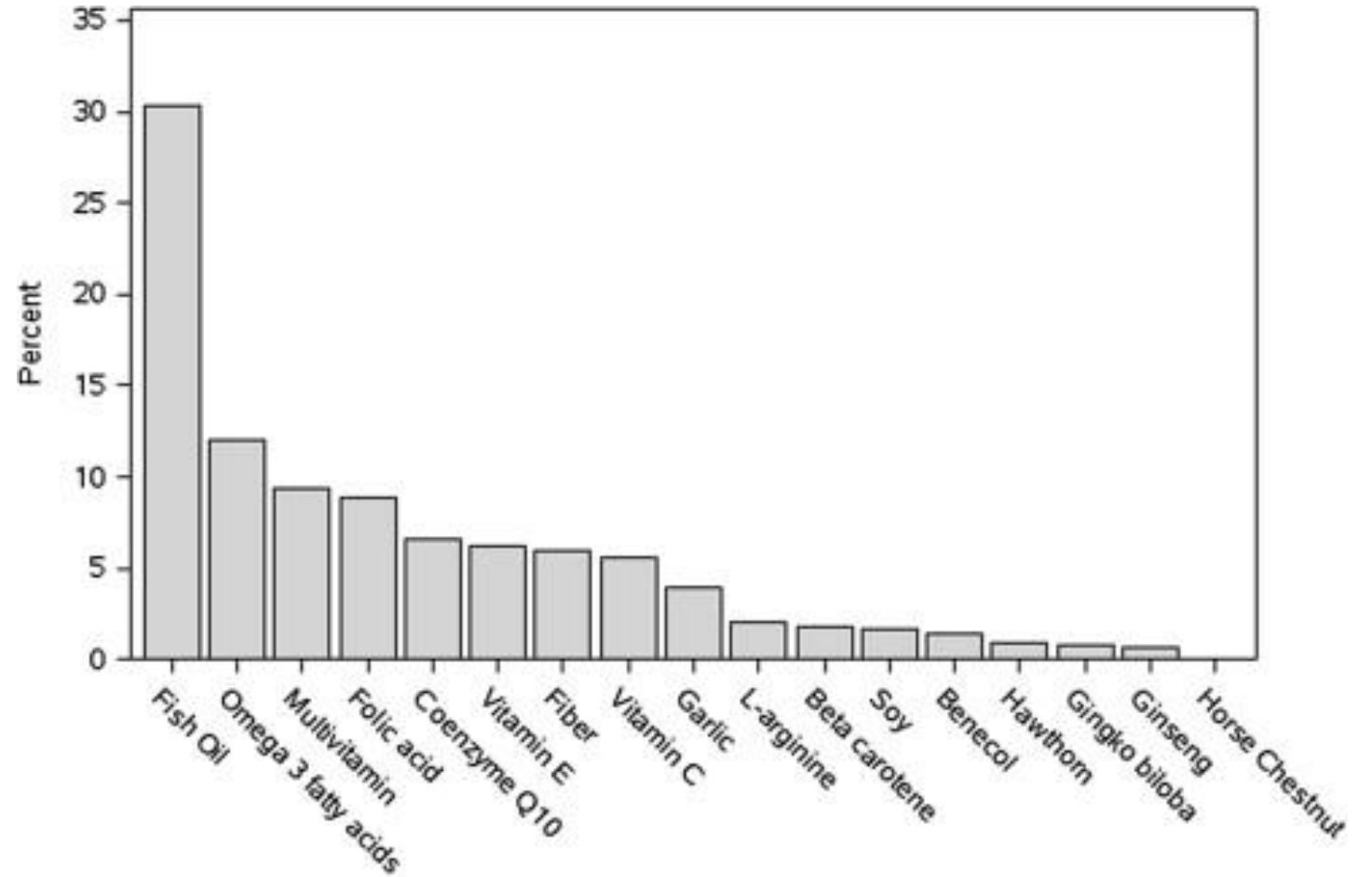
Fish oil and omega 3's are at the top of list

Coenzyme 10

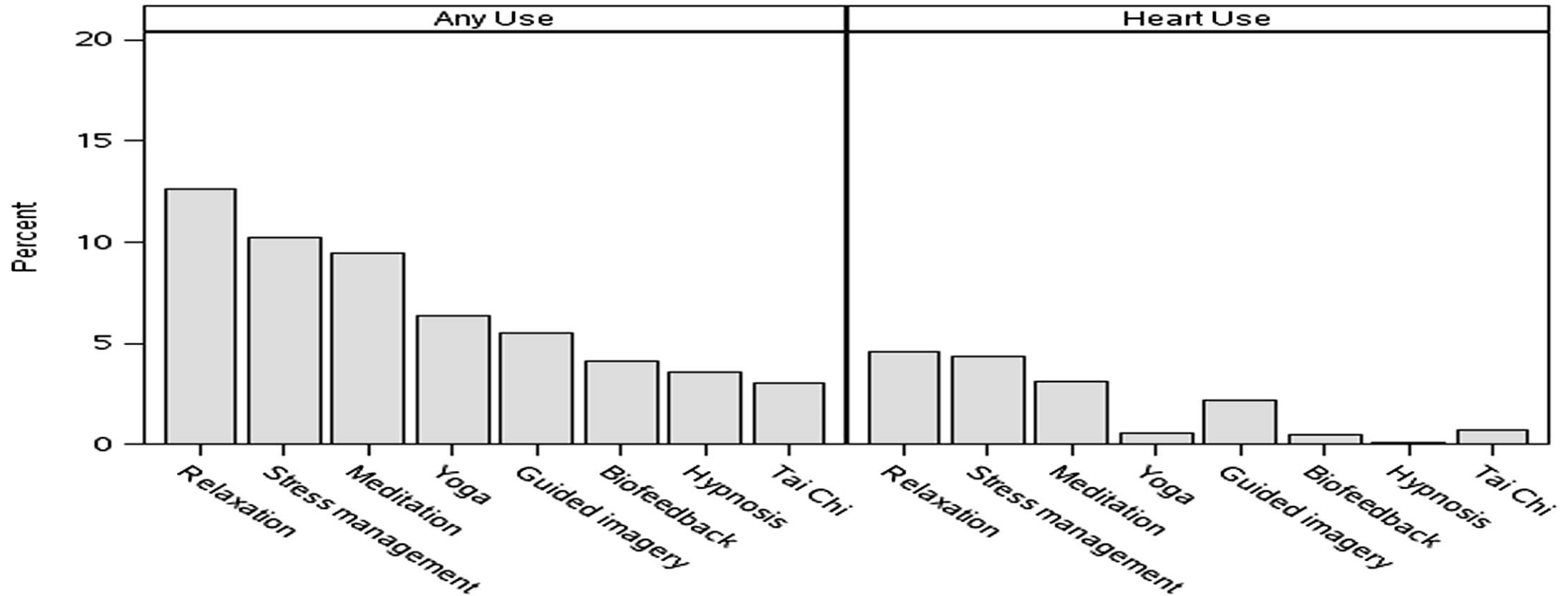
Fiber in the diet

Regrettably, Hawthorn is near the bottom of list

- Studies show this can probably be the most effective herbal remedy



## Use of mind-body alternative treatments





# Biologically-Based Therapies

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## Diet

Marine-derived omega-3 polyunsaturated fatty acids (fish oil)

- Evidence doesn't support

## Garlic

- Lowers blood pressure

## Coenzyme Q10 (CoQ10)

- Good evidence for reducing oxidative stress

## Hawthorn leaf

- Chronic heart failure- good evidence

## Antioxidants

- Anthocyanin's, beta-carotene, catechins, coenzyme Q10, flavonoids, lipoic acid, lutein, lycopene, selenium, and vitamins C and E

## Red yeast rice

- Lowers LDL's

## Soy protein and isoflavones

- Reduces CVD mortality





# Diet and exercise

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Variety of fruits and veggies

- Color is good
- 5 servings

Grain products

Avoid too much fat in your diet

Chicken ,fish, and small amounts of red meat

Exercise each day- do something you like





# Functional foods and heart disease

Soybeans, oats, psyllium, flaxseed, garlic, tea, fish, grapes, nuts, and stanol and sterol ester enhanced margarine

Studies have shown favorable results

- Lowering blood lipid levels
- Improving arterial compliance
- Reducing low-density lipoprotein oxidation
- Decreasing plaque formation
- Scavenging free radicals
- Inhibiting platelet aggregation



# Functional foods

## Red

- *Flavonoids, lycopene, vitamin C, and folate*

## Orange and Yellow

- *Beta-carotene, vitamin A, and vitamin C*

## Green

- *Chlorophyll, vitamin K, carotenoids, indoles, saponins, isothiocyanates, folate, and omega-3 essential fatty acids*

## Purple and Blue

- *Anthocyanin*

## White

- *Flavonoids*





# Garlic and Heart Disease

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Aged garlic supplementation or Garlic tincture

Reduction in hypertension and hypercholesterolemia

Reduction in C-reactive protein (CRP) levels

Modest reduction in BP 7-16 mm Hg (systolic) and 5-9 mm Hg (diastolic)

Reduction of cholesterol ( 8 different meta-analysis)

Results: Clinical evidence has shown that garlic reduces risks associated with CVD by lowering cholesterol, inhibiting platelet aggregation, and lowering blood pressure.

Dose: 2,400 milligrams of Aged Garlic Extract every day

Tincture 5 drops – 3 times a day





# Garlic tincture recipe

Enough fresh cloves peeled to half fill a jar

Crush the garlic first

Add vodka to fill jar

Let sit in cabinet for 4 weeks shaking once in a while

Strain and filter

Brown bottles

Will last 2 years





# Omega-3 polyunsaturated fatty acids (fish oil)

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Meta Analysis from 2013 looked at 16,338 individuals

14 RCT's

Results:

- Supplement of Omega-3 PUFAs in patients with CHD is not associated with a protective effect on major cardiovascular events
- It does exert beneficial effects in reducing death from cardiac causes, sudden cardiac death and death from all causes.

However, with currently available cardio-protective therapies, whether dietary supplementation with Omega-3 PUFAs should be still considered in patients with CHD is currently debated.







# Hawthorn Leaf

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**Main constituent groups of Hawthorn are the bioflavonoids and proanthocyanidins**

**Significant antioxidant qualities**

**Congestive heart failure (Class 11)**

**Hypertension**

**Antioxidant effect**

**Positive inotropic effect**

**Anti-inflammatory effect**

**Antiplatelet aggregation effect**







# Red Yeast Rice (*Monascus purpureus*)

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Used in traditional Chinese herbal medicine

Lowers cholesterol and LDL

Contains Monacolin K which is the same chemical structure as Lovastatin

- Clinical studies suggest that RYR has the potential to reduce serum LDL levels by 10% to 33%

Products vary in consistency

Some products contain Citrinin which has been linked to kidney failure

FDA considers RYR as a drug and not supplement

Dosage 1200mg BID



## Soy protein and isoflavones (phytoestrogens)

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Asian populations who ingest soy products have significantly lower rates of heart disease and stroke

Studies are complicated by other healthy living lifestyle such as exercise and diet

Decreased LDL's with use

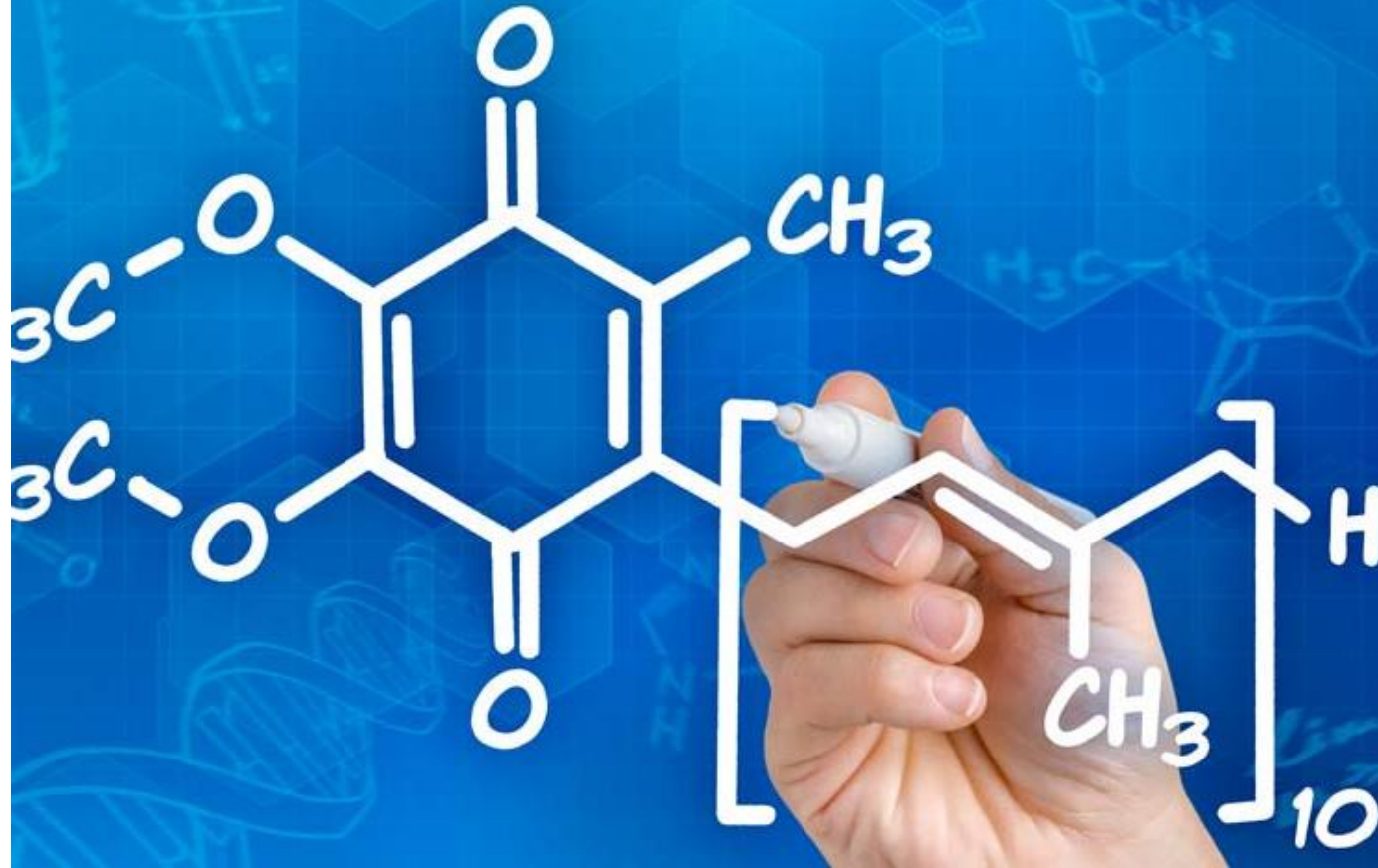
High intake was associated with a decreased risk of mortality from stroke, especially ischemic stroke, and a trend for a decreased risk of mortality from IHD

Supplementation enhances markers of fibrinolysis and anticoagulation or decreases blood pressure in human subjects

Dose 1200mg BID



# COENZYME Q<sub>10</sub>



## Co-Enzyme Q10 (CoQ10) and heart disease

CoQ10 deficiency occurs with natural aging

Ischemic heart disease and dilated cardiomyopathy patients have shown deficiencies

Deficiencies also noted in hypertensive and CHF patients

Dietary supplementation with CoQ10 results in increased levels of ubiquinol-10 within circulating lipoproteins

Powerful intracellular antioxidant

Statins lower CoQ10 levels – this can be another lecture







# Stressful personalities and heart disease

Managing stress to control high blood pressure

- Sleep
- Exercise
- Relaxation techniques
  - Aromatherapy
  - Meditation
  - Yoga
  - Journaling
  - Hobby you like
  - Guided imagery
- Improve your social network
- Try to resolve stressful situations





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# Aromatherapy and heart disease

Aromatherapy can not replace a valve replacement or heart defect but can relieve stress

But- stressors that can impact health can be alleviated with essential oils

Emotions play a huge role in hypertension especially negative emotions

ICU patient can benefit from essential oils

- Study on the effects of aromatherapy on the anxiety, vital signs, and sleep quality of percutaneous coronary intervention patients in intensive care units
- Lavender, ylang-ylang, and bergamot oils were used
- Sleep quality improved
- Reduced anxiety with decreased need for sedation
- Small ↓SBP and ↓DBP





# Aromatherapy and stress

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Bergamot (*Citrus bergamia*)

Melissa (*Melissa officinalis*)

Rose (*Rosa damascene*)

Sweet marjoram (*Origanum majorana*)

Roman chamomile (*Chamaemelum nobile*)

Lavender (*Lavandula angustifolia*)

**Avoid Rosemary and Peppermint**







# Whole Body Medical Systems

## Ayurvedic Medicine

- Plant based diet
- Three great Ayurvedic herbs
  - ***Terminalia arjuna***
    - Good for CHF patients. Clinical trials showed benefits exceeding standard therapy
  - ***Commiphora mukul (guggulu)***
    - Cholesterol control
  - ***Curcuma longa (turmeric)***
    - Anti-inflammatory and lipid reducing
- Shirodhara





# Whole Body Medical Systems

## Yoga

- *Hatha* yoga is the most popular form in the United States. It has 3 essential components:
  - Physical exercises and postures (called *asanas*)
  - Breathing techniques (called *pranayamas*)
  - Concentration and thinking techniques such as meditation
- Significantly improve heart disease risk factors such as lipid profiles, body weight, and blood pressure.
- Schmidt et al. reported a significant improvement in the levels of blood pressure, LDL cholesterol, and body mass index after a 3-month residential training program consisting of a vegetarian diet and yoga





# Whole Medical Systems

## Chinese Medicine

- Chinese herbal medicine
- Qigong
- Acupuncture



ANY  
QUESTIONS  
?



# Conclusion

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01

Western medicine  
can be life saving

02

Reduce your risk  
factors

03

Read the current  
evidence on CAM  
therapies



# References

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