Your blood Anatomy

The cardiovascular system is comprised of both the heart and vessels.
Blood Vessels

**Arteries**
- Carry oxygen-rich blood to the body

**Veins**
- Carry oxygen-depleted blood and waste back to the heart and lungs

**Capillaries**
- Small, thin vessels that connect arteries and veins
This system of arteries, capillaries, and veins is over 60,000 miles long!

http://www.webmd.com/heart-disease/guide/how-heart-works
Blood Vessels

Like the heart itself, peripheral arteries play a key role in cardiovascular health.
Blood Vessels

Deliver nutrients to the body

Limit nutrient delivery when narrowed or hardened

Play a role in blood pressure, a risk factor for cardiovascular disease
Cardiovascular Health

The most common behavioral risk factors of cardiovascular complications are:

- Obesity
- Inactivity
- Tobacco
- Alcohol Abuse
- Unhealthy Diet
Obesity

RAISES cholesterol and triglyceride levels

LOWERS “good” HDL cholesterol

INCREASES blood pressure

INDUCES type-2 diabetes
Impact of Obesity on cardiovascular disease and type-2 diabetes
Average years LOST compared with ideal weight

YEARS Age

20-39

OVERWEIGHT

5

OBESE

10

VERY OBESE

15

20

Grover et al. Lancet Diabetes Endocrinol, 2014
Activity

Physical activity also plays a role in the maintenance of healthy blood pressure and cholesterol levels.

Physical activity can help you maintain a healthy weight.

American Heart Association
Smoking increases the risk of:

- Coronary heart disease
- Stroke
- Peripheral artery disease
- Aortic aneurysm

American Heart Association
http://www.heart.org/HEARTORG/GettingHealthy/QuitSmoking/QuittingSmoking/Smoking-Do-you-really-know-the-risks_UCM_322718_Article.jsp, Feb. 2015.
Smoking

On average, smokers DIE 13-14 years earlier than non-smokers

American Heart Association
http://www.heart.org/HEARTORG/GettingHealthy/QuitSmoking/QuittingSmoking/Smoking-Do-you-really-know-the-risks_UCM_322718_Article.jsp, Feb. 2015.
Heavy Drinking
Always in MODERATION

1 per day

2 per day
Drinking MORE increases the RISK of:

- Obesity
- High blood pressure
- Strokes
Diet

**INCREASE**
- Fruits and vegetables
- Lean meats
- Omega-3 fatty acids
- Fiber

**LIMIT**
- Red meat
- Saturated fat
- Trans fat
- Added sugars
- Sodium (< 2,400 mg / day)
Diet & Supplements

Nutrients play a key role in cardiovascular health

Fiber
Vitamin D
Omega-3 fatty acids
B vitamins
Magnesium
Vitamin C
Flavonoids

These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.
Fiber

Soluble fiber from foods, as part of a diet low in saturated fat and cholesterol, may reduce the risk of heart disease.

Vitamin D

Sufficient amounts play an important role in the maintenance of cardiovascular health.


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Omega-3 Fatty Acids

Supportive but not conclusive research shows that consumption of EPA and DHA omega-3 fatty acids may reduce the risk of coronary heart disease.

B vitamins

As part of a well-balanced diet that is low in saturated fat and cholesterol, folic acid, vitamin B6 and B12 may reduce the risk of vascular disease.
Magnesium

plays an important role in the maintenance of healthy blood pressure and overall cardiovascular health


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Vitamin C functions as an essential cofactor (a compound necessary for the activity of an enzyme) in the biosynthesis of collagen, which plays a key role in blood vessel structure.

Vitamin C collagen is the most abundant structural protein, and found in:

- Blood vessels
- Muscle
- Teeth
- Bones
- Skin
Vitamin C is an antioxidant and neutralizes free radicals.
Vitamin C also helps regenerate other antioxidants


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Flavonoids

Fruits and vegetables are a human’s main source of these numerous health benefits, including:

Antioxidant activity
Heart health protection
Immune support

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Flavonoid consumption can support endothelial function.


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Grape Seed Extract

Contains proanthocyanidins, which are flavonoids found in purple grapes and berries
Grape Seed Extract

Like other flavonoids, grape proanthocyanidins may help improve endothelial function.
Grape flavonoids may also help in the maintenance of healthy cholesterol levels.
That’s where **USANA** Proflavanol® C comes in!
Proflavanol® C

A unique blend of:
Poly C® (vitamin C)
Grape-seed extract
Poly C™

Raises the levels of vitamin C in the blood longer than ascorbic acid alone

CONTAINS:
Calcium
Magnesium
Potassium
Zinc ascorbates
This collaborative study found that supplementation with grape seed extract and vitamin C has a positive influence on healthy blood flow to support cardiovascular health, and significantly increases circulating blood levels of vitamin C and epicatechin.

Grape Seed Extract Plus Vitamin C Improves Indices of Vascular Health

Sherene M. Shenouda1, Naomi M. Hamburg1, Monika Holbrook1, William Chung1, Mustafi Dohadwala1, Tara Caiano1, Mai-Ann Dues1, Matthew Kluge1, Vasilly Chemyshev1, Corey Tabil1, Erik Schneider1, Tony McKinnon1, Tim Wood2, John Cuomo3, Brian Dixon4, Natalie Ech1, Joseph A. Vita5
1Boston University School of Medicine; 88 East Newton Street, C-818; Boston, MA 02118; 2USANA Health Sciences, Inc; 3838 West Parkway Blvd; Salt Lake City, UT 84120

INTRODUCTION
Cardiovascular diseases (CVD) are the leading cause of hospitalization and death in industrialized societies (1). Deficits in vascular endothelial function appear to be a critical factor underlying the progression of nearly all types of CVD. Although the mechanism of endothelial dysfunction has yet to be fully defined, a decrease in nitric oxide (NO) production and/or bioavailability appears to be a common underlying factor.

There is increasing evidence that oxidative stress plays a role in the loss of NO signaling (2-6). In particular, increased vascular superoxide production is associated with impairment of NO and loss of the beneficial vascular effects following consumption of flavonoid-rich food (12).

Grape seed extract (GSE) is a common dietary supplement that is rich in flavonoids, including epicatechin. Thus, we hypothesized that the combination of GSE and ascorbic acid would improve endpoints of vascular health, including endothelium-dependent vasodilation. To test this hypothesis, we performed a double-blind, randomized, placebo-controlled crossover study to examine the effects of GSE (450 mg/day; USANA Health Sciences) in combination with ascorbic acid (1500 mg/day; USANA Health Sciences) for 4 weeks in subjects.

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Improved MICROVASCULAR function


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One dose of Proflavanol® adds another 32 mg of epicatechin
One dose of Proflavanol® adds another 32 mg of epicatechin. That is equal to nearly 300 gm of red grapes.

Vitamin C (as POLY C™) is required for collagen synthesis

It is literally like the mortar in a brick wall, holding our cells and tissues together


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Poly C™

Vitamin C is also widely accepted as an important nutrient for maintaining healthy immune function. It does this by stimulating both the production and function of leukocytes - AKA: white blood cells.


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Our dietary supplements are produced in our own **STATE-OF-THE-ART MANUFACTURING FACILITY**, using quality standards that are above and beyond what is required for dietary supplements.
<table>
<thead>
<tr>
<th>POTENCY</th>
<th>Composition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guaranteed that what is on the label is in the product</td>
<td>Contains what it’s supposed to and in the right proportions</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quality</th>
<th>Identity</th>
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</thead>
<tbody>
<tr>
<td>Meets all specified expectations</td>
<td>Ingredients meet label claim</td>
</tr>
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<table>
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<tr>
<th>Strength</th>
<th>Purity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Offers the correct concentration of ingredients</td>
<td>Free from impurities or contaminants</td>
</tr>
</tbody>
</table>
USANA® ADHERES to the highest standards

GMP

Good Manufacturing Practice
Consistent Quality

NSF®

USANA Health Sciences, Inc.
Facility: Salt Lake City, UT

Certificate Date: May 1, 2016
Certificate Number: A74-2016-000000

NSF International
7900 N. Glenstone Avenue
Suite 400
Springfield, MO 65803

USANA Health Sciences, Inc.
Facility: Salt Lake City, UT

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NSF/ANSL Standard 173
Dietary Supplement

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USANA® is a member of the United Natural Product Alliance – an association of dietary supplement and functional food companies that share a commitment to provide consumers with natural health products of superior:

QUALITY • BENEFIT • RELIABILITY
For additional **CARDIOVASCULAR SUPPORT** and other **HEALTH BENEFITS**, consider these **USANA** products.