

## From Vine to Vessel: *The Role of Grape Polyphenols in Heart Health*



*This NHD CPD eArticle reviews the evidence behind grape polyphenols and provides practical guidance on incorporating polyphenol-containing foods into heart-healthy dietary patterns.*

Cardiovascular disease (CVD) remains a leading cause of global mortality, with diet playing an important role in reducing risk. Polyphenols are plant-derived bioactive compounds found in foods such as grapes and other dark-coloured fruits. Grape polyphenols, including flavanols, anthocyanins and stilbenes, may help heart health through their effects on endothelial function, oxidative stress and inflammation.

CVD is an umbrella term encompassing disorders of the heart and blood vessels, including coronary, cerebrovascular, peripheral arterial and other vascular diseases that impair blood circulation.<sup>1</sup> It is one of the most prominent non-communicable diseases (NCDs) globally.<sup>2</sup> In Europe, more than 60 million potential years of life are lost due to CVD.<sup>3</sup>

It is well established that diets rich in fruits and vegetables are associated with a lower risk of CVD and reduced mortality.<sup>4</sup>

There is growing interest in the promising role(s) of dietary bioactives in the prevention and adjunctive treatment of CVD.<sup>5</sup> Dietary bioactives have been defined as extranutritional constituents that typically occur in small quantities in foods that are being intensively studied for their effects on health.<sup>6</sup> Polyphenols are naturally occurring bioactive compounds found predominantly in fruits (particularly berries), vegetables, tea and cocoa, and have attracted increasing research interest in recent years.<sup>7,8</sup>

Polyphenols found in fruits are increasingly being linked to heart health, potentially protecting against hypertension, myocardial injury and heart failure.<sup>9</sup> Here, we not only explain the role of grape polyphenols in heart health, but introduce a new category of grapes, referred to as red berry grapes, that are particularly abundant in



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compounds with potential health-promoting effects. They are broadly classified into flavonoids – including flavanols, flavones, flavanones, isoflavones and anthocyanins – and non-flavonoid compounds, such as phenolic acids, hydroxycinnamic acids, lignans, stilbenes and tannins.<sup>10</sup>

A recent review of 17 meta-analyses/systematic reviews and 20 randomised controlled trials (RCTs) found that grape bioactives, particularly polyphenols, appeared to produce modest but consistent improvements in markers of CVD, especially endothelial function.<sup>11</sup>

A number of underpinning meta-analyses publications have also studied the effects of whole grapes on blood pressure and vascular function. Ashoori et al (2023) collated evidence from 30 RCTs, finding that eating grape products, particularly in whole form, resulted in a small reduction of systolic blood pressure.<sup>12</sup> Another meta-analysis, pooling evidence from 27 RCTs, found that grape products had blood pressure and lipid-lowering effects, which may be particularly beneficial for individuals with parameters associated with metabolic syndrome.<sup>13</sup>

Further meta-analytical research, collating evidence from 10 studies, found that daily grape polyphenol intake could reduce systolic blood pressure by 1.48mmHg when compared with controls.<sup>14</sup> While clinical studies suggest benefits for cardiovascular risk markers, evidence for reducing long-term cardiovascular events remains limited.

## RED BERRY GRAPES

Red berry grapes, sometimes referred to as red-fleshed table grapes, are unique because polyphenol – anthocyanin – synthesis within the grape flesh occurs independently of the

skin.<sup>15</sup> Unlike conventional table grapes, which have white flesh regardless of whether their skins are red or black, red berry grapes are red or purple throughout. This contributes to their distinctive polyphenol profile, particularly their higher anthocyanin content..

An analysis of different types of grape variety including Melody™ (black), Krissy™ (red) and Timpson™ (white) found that the new red berry grapes have a particularly high phenolic content (52.4–187.3mg/100g fresh weight), generally surpassing traditional black Melody™ grapes, which was attributed to their greater accumulation of anthocyanins.<sup>16</sup>



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# RED BERRY GRAPES NATURALLY COLOURED BY ANTHOCYANINS<sup>1</sup>

**BOOMBITES™ Red Berry Grapes** have a distinctive red flesh created by naturally occurring anthocyanins—the plant pigments responsible for their colour.<sup>1</sup>



## A UNIQUE SOURCE OF ANTHOCYANINS

BOOMBITES™ Red Berry Grapes contain **up to six times more anthocyanins** than conventional, black-skinned table grapes.<sup>2</sup>



## NATURALLY OCCURRING POLYPHENOLS AND ESSENTIAL NUTRIENTS

Analysis by researchers at the University of Murcia found that BOOMBITES™ Red Berry Grapes contain naturally occurring **polyphenols, including anthocyanins and resveratrol**.<sup>3</sup> They also provide fibre and vitamins and minerals including vitamin C, vitamin E, thiamine, vitamin B6, folate, potassium, magnesium, phosphorus, iron and zinc.<sup>4</sup>



## A COLOURFUL ADDITION TO 5 A DAY

An 80 g serving counts as one of your 5 A Day, making BOOMBITES™ Red Berry Grapes an easy way to **add more colour** and variety to the diet.<sup>5</sup>

**A naturally colourful way to support fruit intake as part of a varied, balanced diet.**

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3. University of Murcia. Analysis of the polyphenol composition of BOOMBITES™ Red Berry Grapes. Published: <https://pmc.ncbi.nlm.nih.gov/articles/PMC12692496/>  
4. Nutritional composition analysis of BOOMBITES™ Red Berry Grapes.  
5. Public Health England. The Eatwell Guide (80 g of fruit or vegetables counts as one of your 5 A Day).

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## POTENTIAL ROLES IN HEART HEALTH AND DIETETIC/CLINICAL PRACTICE

Diet and nutrition can play a central role in the prevention of CVD.<sup>17-19</sup> Health promotion campaigns increasingly advocate the 'eat a rainbow' approach and highlight the importance of colour diversity, as consuming a variety of colourful fruits and vegetables can provide a range of bioactive pigments that may help reinforce heart health.<sup>20,21</sup>

Raising public awareness of the potential benefits of consuming polyphenol-containing fruits, including dark-fleshed varieties such as red berry grapes, represents a practical way to incorporate polyphenol-containing foods within established heart-healthy dietary patterns.\* Dietitians, nutritionists and other clinical practitioners have an important role in translating and communicating this emerging evidence to support informed dietary choices.

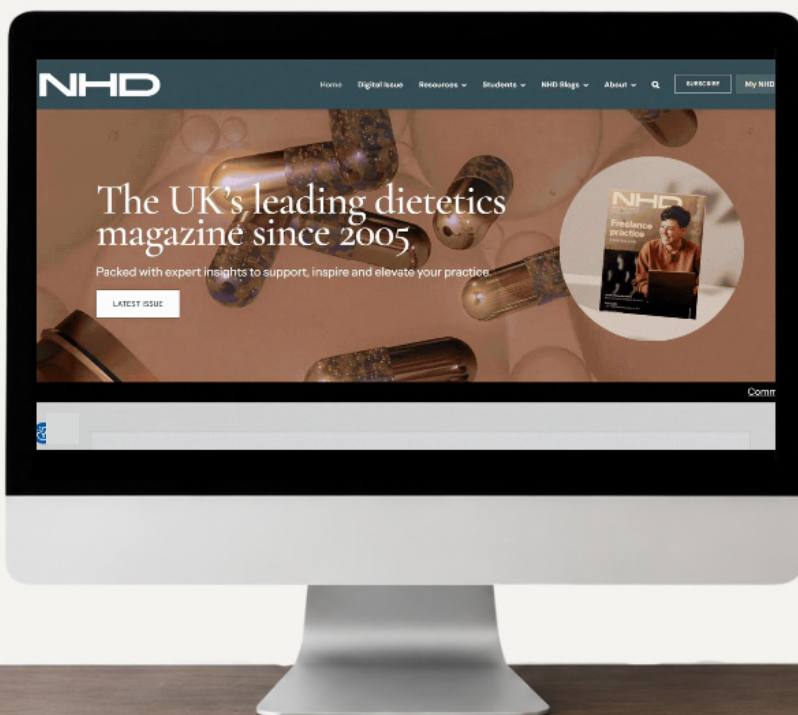
## CONCLUSION

Grape polyphenols are emerging as promising dietary bioactives with the potential to

reinforce cardiovascular health through favourable effects on endothelial function, blood pressure, oxidative stress and inflammation. Although current evidence suggests modest improvements in cardiovascular risk markers, further long-term studies are needed to confirm their impact on clinical cardiovascular outcomes.

Encouraging the regular consumption of polyphenol-rich fruits, including red berry grapes and other deeply coloured fruits, within established heart-healthy dietary patterns, offers a practical, food-first approach to cardiovascular risk reduction. Dietitians and healthcare professionals are well placed to translate this evolving evidence into clear, evidence-based dietary advice for patients and the wider public.

\*For patients with swallowing difficulties, such as dysphagia, grapes should be prepared according to individual swallowing recommendations and, where suitable, cut into quarters lengthwise to reduce choking risk.



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## Questions relating to:

### From Vine to Vessel: *The Role of Grape Polyphenols in Heart Health*

1. What are dietary polyphenols and how are they classified according to their chemical structure?

2. Which foods provide important dietary sources of polyphenols and why are red berry grapes considered particularly abundant in polyphenols?

3. How are polyphenols linked to heart health and what conditions have they been found to potentially protect against?

## Questions relating to:

### From Vine to Vessel: *The Role of Grape Polyphenols in Heart Health*

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| 4. What does the current clinical evidence suggest about the impact of grape polyphenols on cardiovascular risk markers?                                       |
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| 5. What are red berry grapes and how do they differ from more commonly consumed grape varieties in terms of colour and polyphenol content?                     |
|                                                                                                                                                                |
| 6. Do dark grapes, including red berry grapes, have a role within heart health recommendations and how do they fit into existing fruit and vegetable guidance? |
|                                                                                                                                                                |
| 7. What practical dietary advice can be given to patients wishing to increase their intake of polyphenol-containing foods?                                     |
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| 8. What safety considerations should be considered when recommending whole grape products?                                                                     |
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