

The Timing of Exercise Affects Colorectal Cancer Risk, Study Says

Analysis by [Dr. Joseph Mercola](#)

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STORY AT-A-GLANCE

- › Early- and late-day exercise (around 8 a.m. and 6 p.m.) reduced colorectal cancer risk by 11%, with this two-peak activity pattern showing greater benefits than other exercise timing schedules
- › Morning exercise between 8 a.m. and 10 a.m. reduced breast cancer risk by 26%, likely because it helps lower estrogen levels during their natural daily peak around 7 a.m.
- › Evening exercise between 7 p.m. and 11 p.m. specifically benefited men, reducing prostate cancer risk by 25% through improved melatonin production, which helps regulate processes that protect against tumor growth
- › Early morning exercisers showed a 13% lower risk of developing high blood pressure over seven years, while combining morning and evening activity provided similar cardiovascular benefits
- › Exercise timing should align with your chronotype (whether you're a morning or evening person), as misaligned exercise patterns may increase cardiovascular strain and reduce overall benefits

Physical activity is widely recognized as a key factor in reducing your risk of colorectal cancer. But did you know that when you exercise during the day may enhance those protective benefits? A study published in BMC Medicine revealed that specific patterns of activity – such as engaging in exercise during early and late parts of the day – are linked to significantly lower risks of developing colorectal cancer.¹

Researchers analyzed data from 86,252 participants who wore wrist-based accelerometers for seven days. This device captured continuous, 24-hour physical activity data, offering a clear picture of daily movement patterns.

Using a sophisticated method called functional principal component analysis (fPCA), the team identified four distinct activity patterns: day-long activity, late-day activity, early- and late-day activity, and mid-day plus night-time activity. Among these, early- plus late-day activity was associated with the greatest reduction in colorectal cancer risk, even beyond the benefits of overall activity.²

In fact, participants who followed an early- and late-day activity pattern, in the morning at about 8 a.m. and the evening around 6 p.m., had an 11% lower risk of colorectal cancer compared to those who were less active during these times. This two-peak pattern – featuring activity bursts in the morning and evening – appears to provide a unique advantage for prevention.

How Early- and Late-Day Exercise Supports Health

Why is a two-peak activity pattern so effective? The answer lies in how exercise interacts with your body's natural rhythms. Physical activity enhances your metabolism, regulates insulin levels and reduces chronic inflammation – all factors that play a role in cancer development. Timing matters because your body's metabolic and hormonal processes follow a circadian rhythm.

For example, studies suggest that late-day activity may optimize your blood sugar levels and improve insulin sensitivity, while early-day activity may jumpstart metabolic processes.³ Together, this combination could amplify the protective effects of exercise. Moreover, distributing your activity throughout the day may help you avoid prolonged periods of inactivity, which have been linked to increased cancer risk.

Interestingly, this timing may also influence biomarkers like cholesterol and triglycerides. The study found that day-long and early- plus late-day activity patterns

were weakly but positively associated with favorable cholesterol profiles and lower levels of harmful triglycerides, adding another layer of benefit.

The Role of Inflammation in Circadian Exercise Patterns

Your body's circadian rhythm doesn't just govern your sleep — it also plays a role in regulating inflammation. Separate research, published in *Preventive Medicine*, revealed that aligning physical activity with your body's natural rhythms amplifies exercise's anti-inflammatory effects, significantly reducing cancer risk.⁴

Inflammation markers decreased in participants who adhered to circadian-friendly exercise patterns. Specifically, the double-peak pattern, featuring activity in both the morning and afternoon, led to reductions in these biomarkers. This pattern was associated with a 29% reduction in colorectal cancer risk.⁵

The lower inflammation level mediated much of the protective effect seen in reduced cancer incidence. Chronic inflammation acts as a silent driver of cancer progression, fueling processes like DNA damage and abnormal cell growth. By distributing your activity throughout the day, you enhance the regulation of your body's inflammatory response, calming it when it might otherwise be overactive.

The single-peak pattern — featuring one period of focused activity — also showed protective effects.⁶ However, its benefits were less pronounced compared to double-peak patterns, highlighting the importance of both timing and distribution of exercise.

Morning Exercise and Its Protective Role Against Breast Cancer

Research published in the *International Journal of Cancer* also found that exercise aligned with your body's natural rhythms offers a unique advantage in cancer prevention, but in this case morning exercise stood out.⁷

The researchers explored the effects of exercise timing on breast and prostate cancer risk and found that physical activity performed in the early morning (8 a.m. to 10 a.m.)

provided the most robust protective effect against both cancers.

Participants who exercised during this window experienced a reduction in cancer risk of approximately 26% compared to inactive individuals. Why does morning exercise work so well? The researchers suggested early morning exercise might help reduce **breast cancer** risk by influencing **estrogen levels**, which are strongly linked to breast cancer.⁸

Estrogen production, particularly estradiol, naturally peaks around 7 a.m. Physical activity is known to lower estrogen levels, and exercising in the morning may help reduce these levels right after their daily peak, when they are highest. This timing could be especially beneficial for hormone-sensitive breast cancers, which are fueled by estrogen.

For individuals with intermediate or evening chronotypes – those who naturally wake up later or prefer activity later in the day – morning exercise still showed protective effects. Even modest morning activity, such as walking or swimming, could serve as a powerful tool for reducing your cancer risk.

Evening Exercise and Prostate Cancer – A Special Case

While early morning activity stood out in the International Journal of Cancer study, evening exercise (7 p.m. to 11 p.m.) had unique benefits for prostate cancer risk.⁹ The study revealed that men who exercised in the evening reduced their prostate cancer risk by about 25% compared to inactive individuals.

The protective effect for evening activity is likely related to its influence on **melatonin** production, which is involved in regulating processes that protect against tumor growth. Evening exercise delays the melatonin falling phase, increasing the total amount of melatonin produced during the night. This mechanism helps explain why evening activity appeared to offer unique benefits for prostate cancer risk in men.

Evening exercise, however, requires careful consideration, as it may disrupt sleep quality in some people. Always listen to your body and exercise at the time of day that feels

best to you. Incorporating regular daily movement throughout the day is also key for optimal health.

The Timing of Exercise Also Helps Prevent High Blood Pressure

Your morning workout routine might be doing even more than lowering your cancer risk and energizing you for the day – it could be protecting you from developing high blood pressure. A study using the UK Biobank database revealed that early morning exercise significantly reduces the risk of developing high blood pressure.¹⁰

This finding comes from tracking 70,617 people for more than seven years, making it one of the most comprehensive studies on exercise timing and blood pressure. The researchers found two particularly beneficial patterns when they divided participants into groups based on their exercise timing.

Those who exercised early in the morning showed a 13% lower risk of developing high blood pressure while those who combined early morning and later activity showed about a 10.5% lower risk, compared to people who spread their activity throughout the day.

The study found that simply being active in the morning, even at a lower intensity, still significantly reduced the risk of developing high blood pressure. This suggests that taking a morning walk or doing light stretching is likely beneficial for your blood pressure management.

Synchronizing Exercise Timing with Your Chronotype

Interestingly, your chronotype – whether you're a morning or **evening person** – also plays a pivotal role in determining the best time to exercise. For morning types, nighttime exercise elevates cardiovascular risks, likely due to misalignment with their natural rhythms. Conversely, evening types face heightened risks with early morning activity.¹¹

Research published in *Chronobiology International* suggests that exercising during your chronotype's optimal hours, such as midday for most people, aligns better with your body's natural physiology, reducing cardiovascular strain.

Midday activity, often coinciding with conventional work hours, has shown the most consistent cardiovascular benefits. Short activity breaks during the day, like walking or stretching, are highly effective. If your schedule allows, aim to match your peak activity times with your body's natural rhythms to maximize benefits and minimize risks.

Further, if you spend most of your day sitting, integrating bursts of activity into your morning and evening routine may be especially beneficial. The study *BMC Medicine* revealed that a day-long activity pattern was most protective for participants with higher levels of sedentary behavior.¹²

The findings align with prior research showing that **prolonged sitting** contributes to metabolic dysfunction, while regular movement – even at light intensities – helps counteract these negative effects.

Regular Movement Is Key for Optimal Health

Your body thrives on consistent movement, with each type of physical activity offering unique benefits. While the timing of your exercise enhances these benefits, the fundamental principle remains simple: regular movement forms the cornerstone of good health. Whether through **daily walks**, strength training or recreational activities, establishing a consistent pattern of physical activity creates a strong foundation for overall well-being.

Finding your personal balance is key. A sedentary lifestyle poses clear health risks, but pushing too hard with **vigorous exercise** is also counterproductive. Always listen to your body's signals in developing an activity routine that fits your natural rhythms and lifestyle – and remember that every movement counts.

Simple activities like gardening or housework also contribute meaningfully to your daily movement goals. Rather than focusing on one intense daily workout session while

remaining sedentary the rest of the time, aim to incorporate various forms of movement throughout your day. This balanced approach not only supports your health but also makes staying active feel more natural and sustainable.

Sources and References

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