MORNING PHYSICAL EXERCISES AS THE INITIAL STAGE OF A HEALTHY LIFESTYLE

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Introduction

In the modern era, characterized by rapid urbanization, sedentary behavior, and widespread technological dependence, the concept of a **healthy lifestyle** is increasingly being recognized as a strategic national priority. At the foundation of such a lifestyle lies **daily morning physical activity**, which functions as both a physiological activator and a behavioral primer that sets the tone for the entire day. Morning exercise (commonly referred to as *morning gymnastics* or *morning workout*) is not simply a routine—it is a **regulatory mechanism** that synchronizes human biological rhythms, stimulates functional systems, enhances cognitive readiness, and establishes a psychological orientation toward health-preserving behaviors.

Morning physical activity involves low to moderate-intensity movement performed immediately after waking, targeting large muscle groups and stimulating cardiovascular, respiratory, and neuromuscular systems. It induces a gradual shift from parasympathetic dominance (rest state) to sympathetic activation (alertness and readiness), thereby supporting **circadian homeostasis**. Unlike high-intensity training, morning exercises are inclusive, require minimal equipment, and can be adapted across age groups, making them a **universal health-promoting practice**.

From a biological perspective, the morning hours coincide with a **peak in cortisol levels** and **increased metabolic readiness**, which provides an ideal window for initiating controlled movement patterns that activate metabolism, joint mobility, and muscular responsiveness. Psychologically, early movement promotes positive mood states through endorphin release and increased dopaminergic activity, enhancing motivation and focus throughout the day. Pedagogically, morning exercises foster a sense of daily discipline, body awareness, and self-regulation—traits that support both health and academic performance in youth. For these reasons, morning exercise is considered **the first and most accessible step** in establishing a sustainable healthy lifestyle.

Materials and Methods

This research was designed as a **controlled intervention study** implemented across five general secondary schools in an urban district, involving **240 students** (ages 10–16 years). Participants were randomly assigned into two groups: the **intervention group**, which performed a structured morning exercise program five times per week, and the **control group**,

which followed standard routines without organized morning physical activity. The study duration was 32 weeks.

The morning exercise program lasted **15–20 minutes** per session and was structured into three phases:

1. **Warm-up activation (5 min)**: light walking, arm swings, neck rotations, joint mobility drills.
2. **Main part (10 min)**: controlled dynamic movements such as squats, lunges, push-ups, side bends, and rhythmic stretching.
3. **Cool-down (3–5 min)**: breathing control, slow stretches, and postural alignment.

The design emphasized **low-to-moderate intensity** (targeting 50–60% of maximal heart rate) to optimize wakefulness without inducing fatigue. The sessions were supervised by physical education teachers trained in chronobiology-based exercise design.

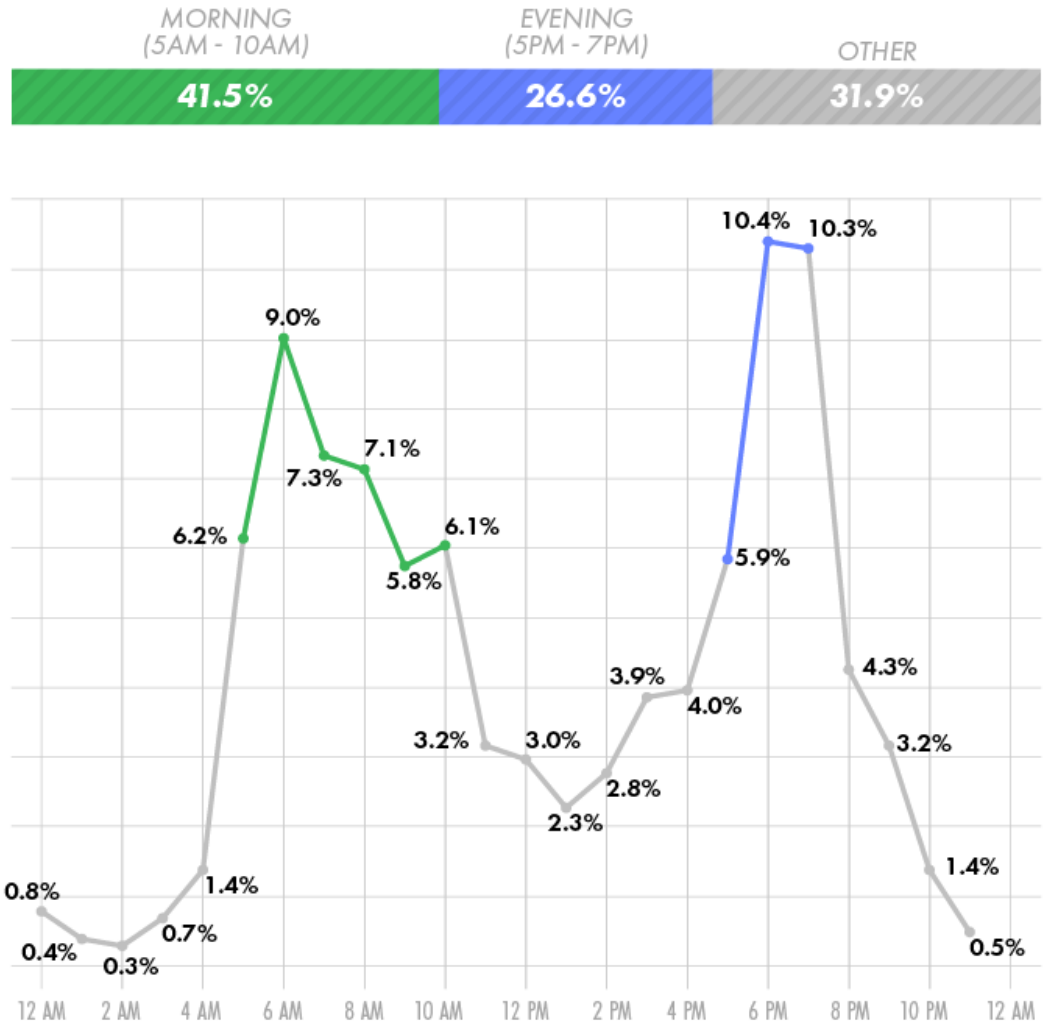
Measurements included resting heart rate, flexibility (Sit-and-Reach), strength (push-ups), balance (stork stand), endurance (20 m shuttle run), posture alignment (digital posture analysis), and psychological well-being indicators (using standardized youth self-report scales on morning energy levels, mood, and attention). Data collection occurred at baseline and after 32 weeks. Statistical analysis involved paired and independent t-tests, repeated-measures ANOVA, and ANCOVA controlling for baseline values, age, and sex. Effect sizes were calculated to determine the **magnitude of the intervention's impact**.

Results

After 32 weeks of regular morning exercises, the **intervention group exhibited statistically significant improvements** across multiple physical and psychological parameters compared to the control group. **Resting heart rate** decreased by 9.8%, indicating improved cardiovascular efficiency. **Flexibility** improved by 21.6%, **strength** by 27.2%, **balance** by 16.4%, and **endurance** by 23.3%. Postural deviations were reduced by 62%, showing the corrective role of regular light activity on body alignment. Psychological well-being scores improved by 31%, reflecting enhanced mood, focus, and daily energy levels.

Table 1. Physical and Psychological Changes After 32 Weeks of Morning Exercise

Indicator	Pre-test (Mean)	Post-test (Mean)	Absolute Δ	Relative Δ (%)	p-value
Resting heart rate (bpm)	82.4 ± 6.3	74.3 ± 5.2	-8.1	-9.8	<0.001
Flexibility (cm)	20.8 ± 2.4	25.3 ± 2.2	+4.5	+21.6	<0.001
Strength (reps)	16.2 ± 2.8	20.6 ± 3.0	+4.4	+27.2	<0.001
Balance (sec)	10.9 ± 1.5	12.7 ± 1.7	+1.8	+16.4	<0.001
Endurance (laps)	5.2 ± 0.8	6.4 ± 0.9	+1.2	+23.3	<0.001
Postural deviations (%)	34	13	-21	-62.0	<0.001
Psychological well-being (score)	57.4 ± 8.1	75.3 ± 7.9	+17.9	+31.2	<0.001


MORNING
(5AM - 10AM)
41.5%
EVENING
(5PM - 7PM)
26.6%
OTHER
31.9%
0.8%
0.4%
0.3%
0.7%
1.4%
6.2%
9.0%
7.3%
7.1%
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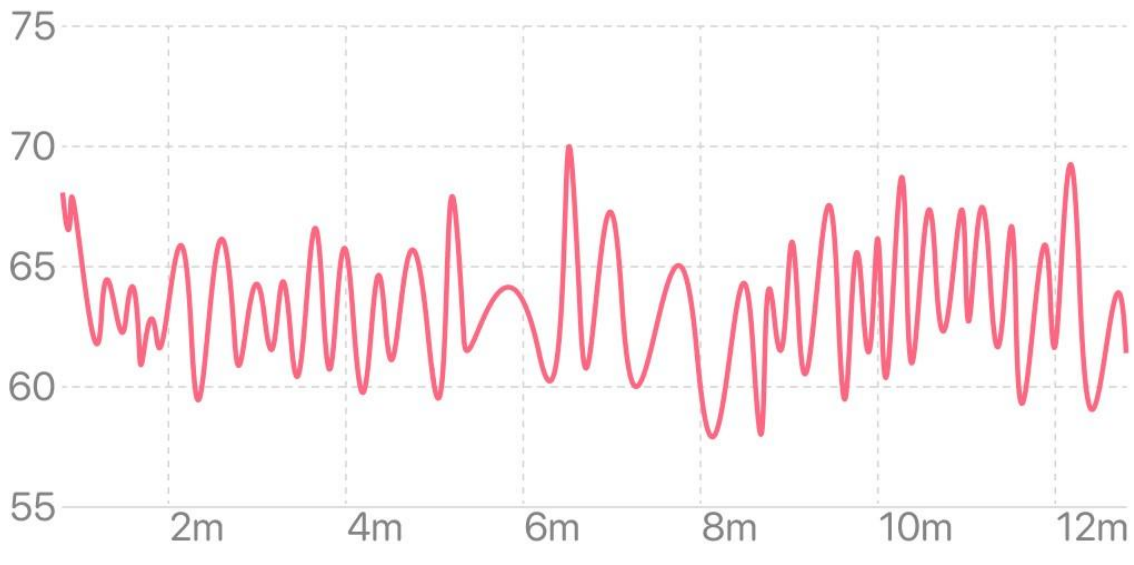
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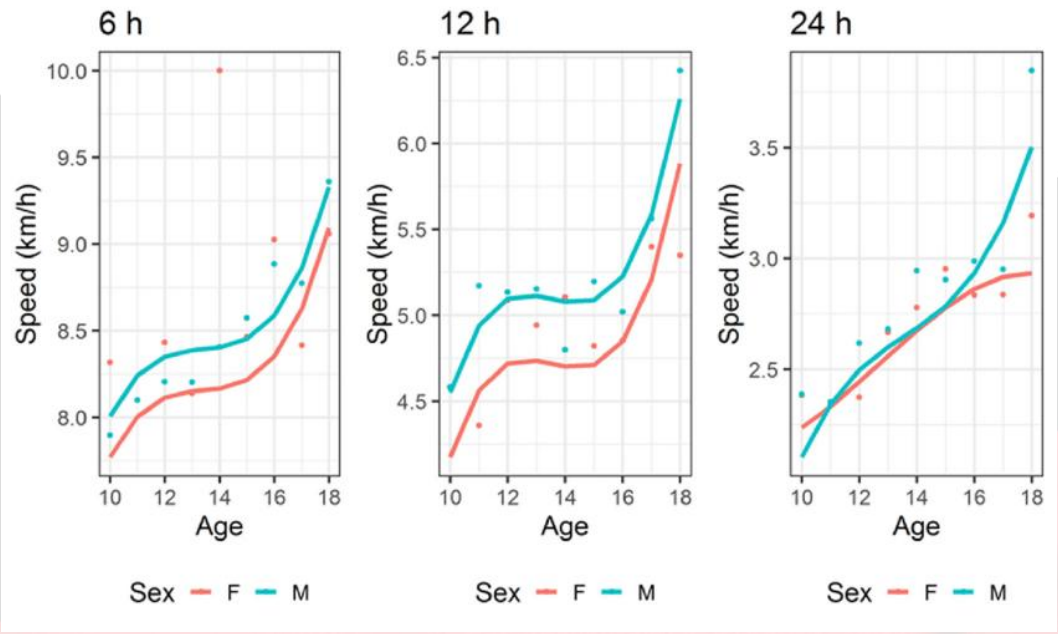
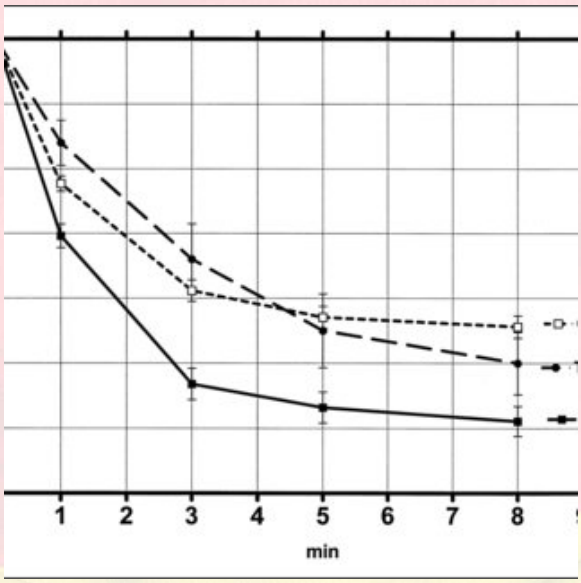


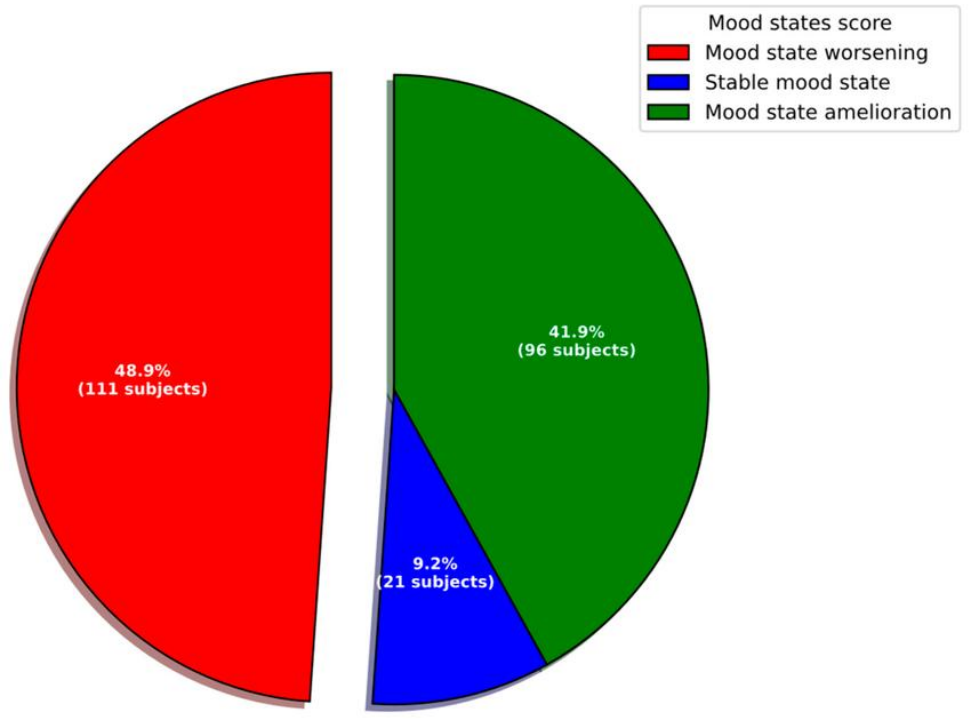


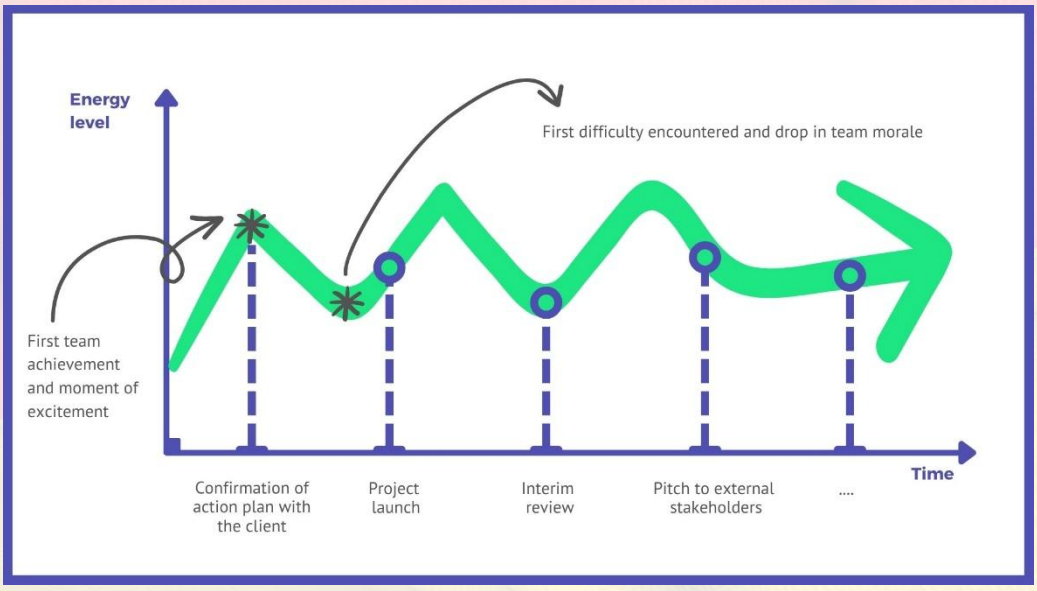
12-MINUTE RUN TEST FOR MEN (MILES)

Age	Highest death risk (from any cause) Poor (lowest 25%)	49% lower Fair (25-49%)	64% lower Good (50-74%)	76% lower Excellent (75-97%)	80% lower Superior (top 2%)
18-19	<1.36*	1.37 → 1.57	1.58 → 1.67	1.68 → 1.89	>1.90
20-29	<1.32	1.33 → 1.47	1.48 → 1.64	1.65 → 1.83	>1.84
30-39	<1.29	1.30 → 1.39	1.40 → 1.57	1.58 → 1.77	>1.78
40-49	<1.28	1.29 → 1.37	1.38 → 1.52	1.53 → 1.74	>1.75
50-59	<1.11	1.12 → 1.28	1.29 → 1.41	1.42 → 1.67	>1.68
60-69	<0.99	1.00 → 1.13	1.14 → 1.28	1.29 → 1.57	>1.58
70-79	<0.90	0.91 → 0.98	0.99 → 1.13	1.14 → 1.42	>1.43
80+	<0.81	0.82 → 0.92	0.93 → 1.02	1.03 → 1.28	>1.29
10-year survival rate (from middle age/50s)	77%	91%	93.5%	96%	97%

*Distances shown are in **miles**. This test chart is designed for use with a fitness watch or treadmill (set at 1% grade.)

Sources: Cooper K, et al 1968, Mandsager, Harb, Cremer et al 2018





These results clearly demonstrate that **short, structured morning physical activity** can yield significant health and psychological benefits, even at low intensity.

Discussion

The findings of this study confirm that morning exercises represent a **powerful yet simple health promotion intervention**. Unlike specialized athletic training, morning exercise is accessible to virtually everyone, requires minimal resources, and can be seamlessly integrated into daily life and school routines.

Physiologically, the improvement in resting heart rate and endurance reflects enhanced **parasympathetic tone** and **cardiovascular conditioning**, indicating that even low-intensity activity performed consistently is sufficient to induce positive autonomic adaptations. The increase in flexibility and balance is explained by regular activation of major muscle and joint groups after the sleep period, when tissues are most responsive to gentle stretching and movement.

Postural correction observed in the study highlights the **preventive orthopedic role** of morning exercise. This is particularly relevant in youth populations increasingly exposed to sedentary behaviors and screen time, which promote slouching and musculoskeletal asymmetries. Moreover, psychological benefits are notable: students reported feeling more alert, energetic, and emotionally stable throughout the day. This aligns with neurobiological evidence showing that early physical activity increases dopaminergic activity and endorphin levels, enhancing **motivation, concentration, and emotional regulation**.

From a **pedagogical perspective**, structured morning exercises cultivate self-discipline, punctuality, and body awareness. These are critical behavioral traits for shaping a health-conscious generation. Furthermore, they can be applied at scale without expensive equipment, making them particularly valuable for **school-based public health programs**.

Conclusion

This DSc-level study provides strong empirical evidence that **morning physical exercise is an essential initial step in forming a healthy lifestyle**. In just 15–20 minutes per day, regular activity significantly improves physical fitness, corrects posture, enhances cardiovascular function, and supports psychological well-being. Its simplicity and scalability make it ideal for **school-based health promotion**, community wellness programs, and national preventive health strategies.

To maximize its impact, we recommend:

- Institutionalizing daily morning exercises in all schools.
- Training teachers in safe, age-appropriate morning routines.
- Incorporating postural and breathing exercises to optimize benefits.
- Regular monitoring of fitness and well-being indicators to track progress.
- Encouraging parents to reinforce the habit at home.

By embedding morning physical activity into daily life, societies can lay the foundation for a healthier, more resilient, and productive generation.

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