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Guidelines

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Ten guidelines for a healthy life: Korean Medical Association Statement (2017)

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Quit smoking

Smoking remains a leading cause of premature death due to cardiovascular disease, chronic obstructive pulmonary disease, and lung cancer. Its harmful effects extend beyond smokers to nonsmokers, as secondhand smoke significantly endangers others—especially children, who face increased risks of respiratory diseases and asthma [1]. Although more than 70% of smokers express a desire to quit, nicotine dependence is recognized as a chronic, relapsing disease. As a result, unassisted quit attempts typically yield a very low success rate of only 3%–5% [2]. Therefore, effective, evidence-based interventions are essential for successful smoking cessation.

A comprehensive, multi-faceted approach greatly improves cessation outcomes. One of the most impactful initial steps is to publicly announce your decision to quit to family, friends, and colleagues. Smoking behaviors are strongly influenced by social networks; having a spouse or friend who smokes can reduce the likelihood of quitting, while support from nonsmokers can significantly increase quit rates.

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Accessing professional medical support is also crucial. Even brief consultations with specialists can increase quit rates, and the benefit increases with more frequent and longer counseling. Clinicians commonly utilize the "5 A's" framework (ask, advise, assess, assist, arrange) to guide smokers through the cessation process. For individuals not yet ready to quit, the "5 R's" framework (relevance, risks, rewards, roadblocks, repetition) is used to build motivation. The combination of counseling and pharmacotherapy has consistently proven to be the most effective pathway to quitting [2].

Pharmacotherapy is strongly recommended for nearly all smokers seeking to quit, as it plays a vital role in managing nicotine addiction. First-line, Food and Drug Administration-approved medications include nicotine replacement therapy, bupropion, and varenicline [1-3] (Table 1). These medications each target withdrawal symptoms and cravings in different ways, and extensive studies have established their safety and efficacy, including among patients with stable psychiatric disorders [4]. In some trials, varenicline has demonstrated greater efficacy than bupropion, though it may also affect an individual's response to alcohol.

Effectively managing withdrawal symptoms is key to long-term success. Weight gain after quitting is common but can be controlled through regular exercise, a healthy diet, and stress management strategies. These not only help maintain a healthy weight but also reduce relapse triggers such as anxiety, supporting sustained abstinence. In contrast, electronic cigarettes are not recommended as cessation aids, as they contain toxic chemicals and lack sufficient safety data [5]. By integrating these evidence-based strategies, smokers can maximize their chances for lasting cessation.

Drink in moderation

The "alcohol flush reaction," characterized by facial redness, rapid heart rate, and nausea following alcohol consumption, is an important but frequently overlooked health indicator in social situations. Contrary to common belief, this reaction is not simply a sign of low tolerance that can be overcome with practice; rather, it signifies a genetic inability to safely metabolize alcohol. Ethanol, the intoxicating component of alcoholic beverages, is first converted into acetaldehyde, a toxic substance. The enzyme aldehyde dehydrogenase (ALDH) then breaks acetaldehyde down into harmless acetate. However, many individuals inherit a less effective form of the ALDH enzyme, due to genetic factors [6].

This condition, known as ALDH deficiency, results in the rapid and hazardous buildup of acetaldehyde even with small amounts of alcohol. It is particularly prevalent among East Asians, affecting approximately 30% of Koreans, 30%–33% of Chinese, and 45% of Japanese people. In contrast, ALDH deficiency is rare among European, North American, and African populations [7]. Acetaldehyde is classified as a Group 1 carcinogen by the World Health Organization (WHO). Therefore, pressuring someone with alcohol flush reaction to drink is equivalent to encouraging the consumption of a known cancer-causing substance, which significantly raises the risk of esophageal, head, and neck cancers. Social practices that promote drinking, especially in professional settings, pose serious risks for these individuals. A responsible approach is to fully exempt them from drinking.

Even for those without this genetic sensitivity, moderation remains essential to prevent health risks. An individual's ability to metabolize alcohol depends on various factors, including gender, body size, and overall health, but following general guidelines can help minimize harm. For occasional drinkers (1–3 times per month), a safe limit is usually 3–4 standard drinks for men and 2–3 for women, consumed slowly over 2–3 hours and accompanied by food and water [8].

Regular, frequent drinking, even at moderate amounts per occasion, increases the risk of mouth, throat, liver, and breast cancers. To reduce these risks, men who drink several times a week should limit their total weekly intake to the equivalent of 2 bottles of soju (or 8 cans of beer), while women should not exceed half that amount [9]. One practical and effective way to reduce both

Table 1. First-line agents for tobacco cessation that have been approved by the Food and Drug Administration

Treatment	Mechanism of action	Common side effects & considerations
Nicotine replacement therapy	Delivers nicotine without harmful toxins to reduce physiological withdrawal symptoms. Available as patches, gum, and lozenges [2].	Skin irritation (patches), nausea, tachycardia. Can be used by those with stable cardiovascular disease.
Sustained-release bupropion	Norepinephrine-dopamine reuptake inhibitor (antidepressant) that reduces cravings and withdrawal. May help control weight gain [1].	Insomnia, dry mouth, headache. A daily dose of 300 mg should not be exceeded due to a rare risk of seizure.
Varenicline	A partial agonist that binds to nicotine receptors to reduce withdrawal symptoms while also blocking the rewarding effects of nicotine [3].	Nausea, insomnia, nightmares. Patients should reduce alcohol intake and be aware of a rare seizure risk.

overall alcohol consumption and cancer risk is to schedule several alcohol-free days each week [10]. Understanding these health risks is essential for fostering a safer and healthier drinking culture.

Eat a balanced diet

Maintaining a balanced diet is fundamental to the prevention of chronic diseases, particularly as dietary habits in Korea increasingly shift toward westernized and unbalanced patterns. Achieving a healthy lifestyle requires a deliberate effort to regulate nutrient intake, control sugar consumption, and maintain a healthy weight.

Balance your macronutrients

For optimal health, the Korean Dietary Reference Intakes recommend a macronutrient distribution of 55%–65% carbohydrates, 7%–20% protein, and 15%–30% fat [11]. This guidance is especially important as many older Koreans tend to consume excessive carbohydrates while lacking sufficient fat in their diets [11]. Striking the right balance through whole foods is crucial, while unscientific fad diets should be avoided. For example, the low-carb high-fat diet is considered an extreme and unsustainable approach. By drastically reducing carbohydrates and promoting fat intake above 70%, it can dangerously elevate low-density lipoprotein ("bad") cholesterol, cause micronutrient deficiencies, and lead to adverse effects such as poor concentration due to ketosis [12]. Individuals with chronic diseases like diabetes or cardiovascular conditions must consult a physician before making significant dietary changes, as abrupt shifts may interfere with medications and worsen their health [12].

Reduce added sugar

The WHO recommends limiting added sugar to less than 10% of total daily calories—equivalent to about 50 grams for a 2,000-kcal diet [13]. Sugar intake in Korea continues to rise, mainly due to increased consumption of processed foods and beverages [11]. The main sources of added sugar differ by age group: children and adolescents primarily consume it through sodas, while adults over 30 often get it from sweetened coffee [11]. The most effective way to reduce sugar intake is to replace sugar-sweetened drinks with water and to remain vigilant about hidden sugars in juices, snacks, and processed milk.

Maintain a healthy weight

Rising obesity rates in Korea are closely linked to high-calorie diets and declining physical activity. Obesity—especially increased abdominal fat—is a significant contributor to metabolic syndrome, which raises the risk for type 2 diabetes, hypertension, and cardiovascular disease. This issue is particularly alarming among adolescents, as the prevalence of metabolic syndrome in Korean youth has doubled over a decade, while rates have declined in the United States [14]. This highlights the critical importance of establishing healthy habits in childhood. Furthermore, rapid weight gain in early adulthood is a strong predictor of future coronary artery disease [15]. To prevent chronic illness, it is essential to maintain a healthy weight throughout life by balancing caloric intake with regular physical activity.

Be physically active

In today's industrialized society, sedentary lifestyles have become a major health hazard. The WHO recognizes physical inactivity as 1 of the 4 leading risk factors for global mortality, along with high blood pressure, smoking, and hyperglycemia [16]. Physical inactivity is a principal driver of chronic diseases and is estimated to cause 21%–25% of breast and colon cancers, 27% of diabetes cases, and 30% of ischemic heart disease [16]. Engaging in regular physical activity is essential not only for preventing these conditions but also for enhancing both physical and mental well-being.

To counteract sedentary habits, physical activity should be seamlessly incorporated into daily life. For busy individuals, this means seizing opportunities for movement during routine tasks, such as taking the stairs instead of the elevator, walking or cycling for short trips, or performing household chores with greater energy [17]. Breaking up long periods of sitting is equally important. Studies have shown that watching TV for more than 2 hours per day increases the risk of diabetes and cardiovascular disease, and that prolonged sedentary time elevates mortality risk regardless of exercise habits. The basic rule is simple and clear: move more, sit less.

For structured exercise, current guidelines recommend a combination of aerobic and strength-training activities. Adults should aim for at least 150 minutes of moderate-intensity aerobic activity (such as brisk walking) or 75 minutes of vigorous-intensity activity each week, performed in sessions of at least 10 minutes. This improves cardiorespiratory fitness, which is inversely related to metabolic disease and mortality [18].

In addition, muscle-strengthening activities involving all major muscle groups should be performed on 2 or more days per week [19]. Resistance training helps build muscle mass, raises basal metabolic rate, and improves blood sugar control, thereby supporting weight management. These principles can be adapted for all ages; older adults should also include balance exercises to prevent falls [19].

The benefits of physical activity extend well beyond disease prevention. An active lifestyle improves bone health, alleviates symptoms of depression and anxiety, boosts mood and self-esteem, and contributes to a higher overall quality of life [20]. Physical activity remains one of the most accessible and effective tools for promoting public health.

Have a regular sleep schedule

Sound sleep is an essential pillar of both physical and mental health. Chronic sleep deprivation impairs judgment and mood, increases the risk of accidents, and, over time, raises the likelihood of developing obesity, diabetes, and cardiovascular disease. Adhering to principles of good sleep hygiene can markedly improve sleep quality and enhance overall health and vitality.

A consistent daily routine is the cornerstone of healthy sleep, reinforcing the body's natural 24-hour biological clock [21]. The most important rule is to wake up at the same time every day, including weekends, regardless of when you go to bed. To strengthen the link between bed and sleep, only go to bed when you genuinely feel sleepy. If you remain awake after a reasonable period, get up and engage in a calming activity until drowsiness returns [21]. While short daytime naps can be rejuvenating, they reduce the "homeostatic sleep drive" needed for nighttime rest; if you must nap, limit it to under 30 minutes to avoid disrupting your main sleep period [22].

Daytime lifestyle choices significantly influence sleep at night. Regular daytime exercise is especially beneficial, as it has been shown to increase sleep duration, shorten the time needed to fall asleep, and improve overall sleep quality. However, vigorous exercise should be avoided in the few hours before bedtime, as it can be overstimulating and delay sleep onset [23].

Caffeine and alcohol must also be managed carefully. Caffeine can substantially reduce total sleep time and disrupt sleep cycles, with adverse effects persisting even when consumed up to 6 hours before bedtime [23]. Nicotine is another stimulant that impairs sleep quality. Although many use alcohol to relax, it initially induces drowsiness but ultimately fragments sleep, diminishes its restorative effects, and causes frequent awakenings during the night [24].

By maintaining a regular sleep schedule, ensuring sufficient rest for your age, and making mindful choices about exercise, caffeine, and alcohol, you can proactively support your sleep and foster a healthier, more energetic life.

Think positively

A happy and meaningful life is not left to chance but is a skill that can be cultivated through conscious practice. According to the principles of positive psychology, intentionally fostering positive emotions can expand our thinking, improve physical health, and strengthen our connections with others [25]. By developing habits focused on gratitude, self-worth, and relationships, we can significantly enhance our well-being.

The first step is to appreciate the small things in life. Research consistently shows that people who regularly practice gratitude experience more joy, optimism, and energy [26]. This involves deliberately noticing the good in everyday experiences, no matter how minor. At the end of each day, take a moment to reflect on what went well. Savoring positive moments and expressing thanks—whether by writing them down or telling someone directly—is a powerful intervention that can lead to lasting increases in happiness [25]. This simple habit shifts your focus away from what is lacking and toward what is abundant.

Second, resist the urge to compare yourself to others. Instead, focus on your personal growth and unique character strengths. Positive psychology teaches that human goodness and excellence are just as real and important as disease and disorder [25]. True confidence comes not from feeling superior to someone else, but from recognizing your own progress compared to yesterday. Identifying and using your personal strengths is a skill that can be learned, fostering resilience and helping you navigate challenges more happily.

Finally, remember that happiness is rooted in strong relationships. The need to belong and form positive attachments is a fundamental human motivation [27]. People with robust social support networks are not only happier but also physically healthier and better equipped to manage life's inevitable stressors [28]. Happiness also grows from engaging in valued activities with those you care about [29]. Prioritize meals and pleasant conversations with friends and family. Investing in these connections is one of the most dependable and rewarding ways to achieve a fulfilling life.

Receive routine health screenings and immunizations

Prevention is always better than cure. South Korea's national health screening and immunization programs are essential for proactive health management, helping to detect diseases early and prevent infectious outbreaks. Making use of these programs is a cornerstone of maintaining a long and healthy life.

Health screenings: your first line of defense

Regular health screenings are crucial because many chronic diseases and cancers are asymptomatic in their early, most treatable stages. Early detection through screening significantly improves outcomes. For example, screenings can reduce mortality rates by 25% for breast cancer, 20% for colon cancer, and 42% for cardiovascular diseases [30].

South Korea offers a comprehensive, life-cycle-based National Health Screening Program, which includes a targeted National Cancer Screening Program for 5 major cancers: stomach, liver, colon, breast, and cervix. Despite the proven benefits and low cost of these programs, participation rates remain suboptimal, with only 48.3% of eligible individuals receiving cancer screenings [31]. An even more critical issue is the low follow-up rate; many people with a positive or suspicious result do not complete the necessary confirmatory exams. It is important to remember that screening is intended to identify potential problems. Therefore, always consult a doctor for follow-up if you receive an abnormal result. Following the recommended screening schedule and acting on the results are the best ways to safeguard your health.

Immunizations: protecting yourself and your community

Immunizations are the single most effective way to prevent infectious diseases. They protect not only the individual but also the community by establishing herd immunity [32]. Korea's national hepatitis B vaccination program, which dramatically reduced the rates of chronic hepatitis and liver cancer, is a powerful example of the public health impact of widespread immunization.

Korea's National Immunization Program provides essential vaccines for children and adults (Tables 2, 3) [11,12,33,34]. While childhood vaccination coverage is high, immunization rates among at-risk adults, such as for influenza, remain concerningly low. Vaccines are extremely safe and effective, and the tremendous benefits of disease prevention far outweigh the minimal risk of ad-

Table 2. Recommended immunization schedule for children

Vaccine	Age/doses
BCG (tuberculosis)	Within 4 weeks of birth (1 dose)
HepB (hepatitis B)	At birth, 1 month, 6 months (3 doses)
DTaP (diphtheria, tetanus, pertussis)	2, 4, 6, 15–18 months; 4–6 years (5 doses)
Tdap/Td	11–12 years (1 booster dose)
IPV (polio)	2, 4, 6–18 months; 4–6 years (4 doses)
Hib (Haemophilus influenzae type b)	2, 4, 6, 12–15 months (4 doses)
PCV (pneumococcal conjugate)	2, 4, 6, 12–15 months (4 doses)
MMR (measles, mumps, rubella)	12–15 months, 4–6 years (2 doses)
Varicella (chickenpox)	12–15 months (1 dose)
HepA (hepatitis A)	12–23 months (2 doses, 6 months apart)
Japanese Encephalitis	Varies by vaccine type (2 or 5 doses)
HPV (human papillomavirus)	11–12 years (2 doses, 6 months apart)
Influenza (flu)	Annually, starting at 6 months

Adapted from Korea Centers for Disease Control and Prevention [11]. This is a simplified schedule; consult a physician for personalized advice.

Table 3. Recommended immunization schedule for adults (19+)

Vaccine	Recommendation
Influenza (flu)	Annually for all adults, especially those ≥ 65 or with chronic conditions.
Tdap/Td (tetanus, diphtheria, pertussis)	Td booster every 10 years. Substitute 1 Td booster with Tdap once.
Pneumococcal (PPSV23)	1 dose for all adults ≥ 65. 1–2 doses for adults 19–64 with certain chronic health conditions (e.g., heart/lung disease, diabetes, smokers).
Herpes zoster (shingles)	1 dose recommended for all adults ≥ 60.
Hepatitis A	2 doses for at-risk adults (e.g., chronic liver disease) or those seeking protection.
Hepatitis B	3 doses for at-risk adults (e.g., chronic liver disease, diabetes) who were not vaccinated as children.
MMR (measles, mumps, rubella)	1–2 doses for adults born in 1957 or later without evidence of immunity.
Varicella (chickenpox)	2 doses for adults without evidence of immunity.

Adapted from Korea Centers for Disease Control and Prevention [12]. Recommendations may vary based on health status, occupation, and travel. Consult a physician.

verse reactions. Following the recommended immunization schedule is essential for your health and the well-being of the community.

Manage stress

While some stress can provide energy and motivation, excessive stress is a primary cause of physical and mental illness. Since modern life makes stress unavoidable, the key is not to eliminate it but to manage it effectively. Mastering stress requires a combination of shifting your mindset, developing active coping strategies, and engaging in restorative leisure activities.

The power of your mindset

The intensity of stress you experience is determined not by the situation itself, but by your thoughts about it. By recognizing and challenging overly negative or irrational thoughts, you can fundamentally transform your emotional responses and reduce the harmful effects of stress [35].

This mental resilience is anchored by strong self-esteem. Self-esteem, which is rooted in self-acceptance and a positive view of your abilities, acts as a crucial buffer against life's challenges. It empowers you to handle criticism and setbacks without losing courage or initiative. Rather than trying to avoid stress, building robust self-esteem enables you to accept stress as a natural part of life. You can nurture this by acknowledging your imperfections while still valuing your unique strengths, and by regularly stepping away from daily pressures to reflect and regain a positive perspective.

Active coping strategies

When stress arises, you can calm your body's physical and mental responses with practical techniques. Meditation and mindful breathing are proven methods for soothing the nervous system. Even just 10 minutes a day can lower blood pressure, reduce anxiety, and improve focus. When managing anger, it is best to pause and observe your feelings before reacting. If you must express anger, focus on communicating the specific behavior that upset you rather than making general accusations.

Excessive anxiety can also be managed by engaging in activities that signal safety to the brain. These include taking short walks in nature and having warm, empathetic conversations with trusted friends, which help shift your mind from a state of high alert to one of peace and connection [36].

The vitality of leisure

Leisure is not an indulgence; it is an essential lubricant that keeps life running smoothly. Regularly engaging in a hobby—whether physical, social, cultural, or creative—regenerates energy, prevents burnout, and provides emotional stability [37-39]. The specific activity is less important than the enjoyment and immersion it brings. Hobbies offer a healthy, positive alternative to negative coping mechanisms such as drinking or smoking. By making time for activities that bring you joy and allow you to disconnect from daily pressures, you actively recharge your mind and build a more resilient, vibrant life.

Pay attention to particulate matter and emerging infectious diseases

Modern life presents 2 growing threats to public health: chronic exposure to particulate matter (PM) in air pollution and the acute risk of emerging infectious diseases. Addressing these challenges requires both government action and proactive personal habits to safeguard individual and community well-being.

The invisible danger of particulate matter

Particulate matter—especially fine particles ($PM_{2.5}$) from traffic and industrial sources—poses a severe health risk. These tiny particles can bypass the body's natural defenses, penetrate deep into the lungs, and enter the bloodstream [40]. They often carry toxic heavy metals and other harmful substances. The WHO has classified outdoor air pollution and diesel engine exhaust as Group 1 carcinogens, definitively linking them to cancer [41].

Long-term exposure significantly increases mortality from cardiovascular diseases such as heart attacks and strokes, as well as from respiratory illnesses and lung cancer [42]. The Organization for Economic Cooperation and Development has issued a stark warning: without significant change, South Korea faces the highest projected mortality rate and economic loss from air pollution among all member nations by 2060 [43]. To reduce this risk, it is crucial to limit exposure by staying indoors and wearing a certified mask when PM levels are high and to reduce emissions by minimizing personal vehicle use.

Preventing emerging infectious diseases

In today's interconnected world, infectious diseases can rapidly spread across borders. Preventing their transmission relies on 2 key strategies: travel preparation and daily health etiquette.

Before traveling abroad, research the health risks at your destination. Visit an infectious disease or travel clinic at least 1 month before your trip. This ensures time for any necessary vaccinations [13] (Table 4), as immunity may take several weeks to develop, and for obtaining preventive medications such as those for malaria.

Table 4. Recommended immunizations for overseas travelers

Vaccine	Recommended for	Vaccination notes
Yellow fever	Travelers to endemic regions in Africa & South America. Required for entry to some countries.	1 dose every 10 years. Must be given at least 10 days before arrival.
Hepatitis A	All travelers to developing countries, especially those under 30 without immunity.	2 doses, given 6–12 months apart.
Typhoid	Travelers to South Asia, Southeast Asia, and other areas with poor sanitation.	1 dose, provides protection for approximately 2 years.
Meningococcal	Travelers to the "meningitis belt" in sub-Saharan Africa or for the Hajj pilgrimage.	1 dose. Revaccination may be needed after 5 years.
Rabies	Long-term travelers, veterinarians, or those working with animals in high-risk areas.	3 doses (pre-exposure prophylaxis).
Japanese encephalitis	Travelers spending extended time in rural or agricultural areas of Asia.	2 or 5 doses depending on vaccine type.
Cholera	Aid and refugee workers in areas with active outbreaks.	Oral vaccine (Dukoral).

Adapted from the Korean Society of Infectious Diseases [13]. This is a general guide; always consult a travel medicine specialist for personalized recommendations based on your specific itinerary and health status.

At home and while traveling, practicing basic "health etiquette" is your first line of defense. Proper hand hygiene is one of the most effective ways to prevent illness, stopping up to half of all respiratory and diarrheal infections [44]. Additionally, practice cough etiquette: cover your mouth and nose with your sleeve (not your hand), wear a mask when sick, and avoid crowded places to protect others. These simple habits are a foundation of public health.

Avoid excessive exposure to mobile devices

While smart devices are essential tools in modern life, excessive use poses significant risks to both physical and mental health. Mindful usage—knowing when, where, and how to disconnect—is crucial for preventing the negative consequences of digital overexposure, including obesity, sleep disruption, and impaired child development.

Disconnect during meals to support healthy habits

Using smartphones during meals is strongly linked to poor dietary choices and weight gain. Adolescents who spend over 5 hours a day on screens are twice as likely to consume sugary drinks and 43% more likely to be obese [45]. This is due to several factors: screen time is a sedentary activity, it increases exposure to junk food advertising, and distracted eating often results in overeating. In addition, blue-enriched light from LED (light-emitting diode) screens can disrupt insulin metabolism and blood sugar levels, further contributing to metabolic issues [46]. To encourage healthier eating, it is essential to put devices away and practice mindful eating without digital distractions.

Power down before bed for better sleep

The blue light emitted from smartphones, tablets, and computers is a major disruptor of the body's natural sleep-wake cycle. Exposure within 2 hours of bedtime suppresses melatonin production—the hormone that signals the brain to sleep [47]. This can make it harder to fall asleep, lower sleep quality, and cause next-day fatigue, impairing concentration and performance at school or work. To promote better sleep, establish a strict, screen-free period of at least 2 hours before bedtime. Your bedroom should be a sanctuary for sleep, not a place for late-night scrolling.

Protect children's development from excessive screen time

For infants and toddlers, exposure to smart devices is especially harmful. The brain undergoes its most rapid development from birth to age 2, a process that depends on active, real-world interaction—not passive screen time [48]. Early and excessive exposure can impede cognitive development, language acquisition, and social skills [49]. The risk of smartphone overdependence is rising alarmingly rapidly in this age group.

Parents must set a strong example, as their own screen habits greatly influence their children's. It is critical to severely restrict—or ideally, eliminate—screen time for children under 2. For older children, parents should set clear boundaries and encourage face-to-face play and group activities to support healthy physical, cognitive, and social development.

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Supplement 2. English version of "Ten guidelines for a healthy life: Korean Medical Association Statement (2017)."

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