



Physical Education and Sports for Community Health

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Abstract:

Many times, in order to survive we have to start a change process. We sometimes need to get rid of old memories, habits and other past traditions. Only freed from past burdens, can we take advantage of the present? The average developed adult is made up of 60 million million cells. An average adult's skin weights about 9 pounds, three times as much as the brain, and covers an area more than 18 square feet. An average human head is covered by about 100,000 strands of hair. A blink occurs once every two to ten seconds, lasting 0.3 to 0.4 seconds. This accounts for about half an hour of our waking time. An infant does not blink at all in the first few months of life. Body smell is as distinctive and individual as a fingerprint, and is unique to family group. An adult has an average of 9000 taste buds, but a baby has many more. To keep maintain healthy changes in human with the help of Physical Education and Sports for Community Health body and mind some exercises are suggested in present article.

Keywords: Physical Education and Sports, Community Health.

Preamble:

Change? Change is only the reality and eternal truth! Change is the secrete of all success!! Why is change needed? Many times, in order to survive we have to start a change process. We sometimes need to get rid of old memories, habits and other past traditions. Only freed from past burdens, can we take advantage of the present?

Japanese time concept: “The pathetic died yesterday, wanted to live for another day! You fortunate lived the day; think what you have done yesterday?”

BASIC “?” What Is Life? Somebody Said That “It’s A Game Of Chance And Choice” Chance – You Don’t Have Option, Choice – Think, What You Have Opted.

Status? Are you Rich or Poor?

Cells:

- The average developed adult is made up of 60 million million cells.
- 300 million cells die in the body every minute, but the number of cells remains fairly constant throughout our life. Dead cells are replaced immediately.

Skin:

- An average adult’s skin weights about 9 pounds, three times as much as the brain, and covers an area more than 18 square feet.
- The skin cannot lie. Lie detectors, or polygraphs, work on the principle that under stress or threat the skin undergoes certain measurable changes caused by hormonal activity.

Hairs:

- An average human head is covered by about 100,000 strands of hair.
- Each ordinary hair has a life span of about three years, eyelashes live about 150 days.

Eyes:

- A blink occurs once every two to ten seconds, lasting 0.3 to 0.4 seconds. This accounts for about half an hour of our waking time. An infant does not blink at all in the first few months of life.
- The surface of the eye has considerable freedom of movement. The eyeball can tilt 35 degrees up, 50 degrees down, 45 degrees out and 50 degrees in towards the nose.

Smell:

- Body smell is as distinctive and individual as a fingerprint, and is unique to family group.
- Police dogs cannot distinguish between the body smells of identical twins, even if the twins live in different towns, have different jobs and eat dissimilar foods.

Taste:

An adult has an average of 9000 taste buds, but a baby has many more. Babies even have buds on the inside of their cheeks. Taste buds are lost as we get older, which in part explains a child's vigorous reaction to strong tastes.

Respiration:

Approximately 500 cubic feet of air per day

surface area of lung - the size of the tennis court.

speed of a sneeze -between 60 to 100 miles per hour.

Calculation of Dog, Man and Tortoise calculation "The law of use and disuse",

Equal breath counts for everybody

- (Life span in years X Days X Hours X Minutes X Breath count per minute)
- | | | |
|----------|-----------------------------|-------------|
| Dog | = (20 X 365 X 24 X 60 X 45) | =473040000 |
| Human | = (60 X 365 X 24 X 60 X 15) | =473040000 |
| Tortoise | = (150 X 365 X 24 X 60 X 6) | = 473040000 |

CALCULATIONS OF RESPIRATORY SYSTEM

- Every day we breath around 3 Oxygen cylinders
- Each cylinder cost Rs. 700/- in most cheapest hospital
- Every day around Rs. 2100/-
- Every month around Rs. 63,000/-
- Every year around Rs. 7,56,000/-
- In lifetime with average span of 60 years is Rs. 4,53,60,000/-

* Nature provides in abundance

Bones:

- The thigh bone -1200 pounds per square inch when we walk.
- There are generally 206 bones in an adult body, a baby has 350

Muscles:

There are some 30 muscles attached to the bones of the skull. Their sole purpose is to give the face expression.

1 cc of muscle can generate a force of approximately 50 Newton's

Muscle Fiber – Genetically determined – STF & FTF

Muscle Hypertrophy

Muscle Tone

Coordination – Reaction ability

Heart:

- In the course of one day, 8 tons of blood passes through the heart.
- The entire network of vessels which makes up the circulatory system measures 60,000 miles, which is more than twice the circumference of the earth.
- The power of the human heart is such that if the main artery, the aorta, was cut, a stream of blood 6 feet high would be released.
- Effect of Exercise:
 - Athletes Heart
 - Hypertrophy
 - Brady Cardiac
 - Stroke Volume
 - Heart Rate – Target Heart Rate – How to measure

- Cardiac Output
- Capillarization
- Venus Return

CALCULATIONS OF CARDIAC SYSTEM

- Each minute heart beats approximately 70 times in an average adult
- In each beat the heart pumps out 70ml of blood approximately out of heart
- In each minute it counts to approximately 5 liters
- In each hour it is around 5lit x 60min = 300 liters
- In each day it is around 300lit x 24hrs = 7,200 liters
- In each month it is 7,200lit x 30 = 2,16,000 liters
- In average 60 years of life 216000lit x 60yrs = 1,29,60,000liters
- No motor in the world will lift water up to 5 feet for 60 years without maintenance
- Approximately electricity required for 1HP water pump if run for 24 hours consumes approximately 20 units of electricity which amounts to Rs. 140/-

FIND YOUR FRAME SIZE

SEX	HEIGHT WITHOUT SHOES	ELBOW BREADTH FOR MEDIUM FRAME
MEN	5'1" – 5'2"	2&1/2" – 2&7/8"
	5'3" – 5'6"	2&5/8" – 2&7/8"
	5'7" – 5'10"	2&3/4" – 3"
	5'11" – 6'2"	2&3/4" – 3&1/8"
	6'3" – UP	2&7/8" – 3&1/4"
WOMEN	4'9" – 4'10"	2&1/4" – 2&1/2"
	4'11" – 5'2"	2&1/4" – 2&1/2"
	5'3" – 5'6"	2&3/8" – 2&5/8"
	5'7" – 5'10"	2&3/8" – 2&5/8"
	5'11" – UP	2&1/2" – 2&3/4"

Find your weight in pounds

SEX	HEIGHT (Without Shoes)	WEIGHT IN POUNDS (Without Clothes)		
Male	Feet' Inches''	SMALL FRAME	MEDIUM FRAME	LARGE FRAME
	5'1''	123-129	126-136	133-145
	5'2''	125-131	128-138	135-148
	5'3''	127-133	130-140	137-151
	5'4''	129-135	132-143	139-155
	5'5''	131-137	134-146	141-159
	5'6''	133-140	137-149	144-163
	5'7''	135-143	140-152	147-167
	5'8''	137-146	143-150	150-171
	5'9''	139-149	146-158	153-175
	5'10''	141-152	149-161	156-179
	5'11''	144-155	152-165	159-183
	6'0''	147-159	155-169	163-187
	6'1''	150-163	159-173	167-192
	6'2''	153-167	162-177	171-197
	6'3''	157-171	166-182	176-202

SEX	HEIGHT (Without Shoes)	WEIGHT IN POUNDS (Without Clothes)		
		SMALL FRAME	MEDIUM FRAME	LARGE FRAME
Female	Feet' Inches"			
	4'9"	99-108	106-118	115-128
	4'10"	100-110	108-120	117-131
	4'11"	101-112	110-123	119-134
	5'0"	103-115	112-126	122-137
	5'1"	105-118	115-129	125-141
	5'2"	108-121	118-132	128-144
	5'3"	111-124	121-135	131-148
	5'4"	114-127	124-138	134-152
	5'5"	117-130	127-141	137-156
	5'6"	120-133	130-144	140-160
	5'7"	123-136	133-147	143-164
	5'8"	126-139	136-150	146-167
	5'9"	129-142	139-153	149-170
	5'10"	132-145	142-156	152-173
	5'11"	135-148	145-159	155-176

HOW FIT ARE YOU REALLY? What is your resting Heart Rate?

Results	Men	Men	Men	Men	Women	Women	Women	Women
Age	Ex	G	S	P	Ex	G	S	P
20-29	59<	60-69	70-85	86+	71<	72-77	78-95	96+
30-39	63<	64-71	72-85	86+	71<	72-79	80-97	98+
40-49	65<	66-73	74-89	90+	73<	75-79	80-98	99+
50+	67<	68-75	76-89	90+	75<	77-83	84-102	103+

HOW FIT ARE YOU REALLY? Are you carrying excess fat?

- Pinch yourself at the waist and on the upper arm, grasping as much flesh as possible between your forefingers and thumb.
- If you can pinch more than 1 inch of spare flesh, you probably need to shed some fat. To do so, you may need only to tone up- replace fat with muscle- or to lose weight. Every ¼ inch of fat beyond the 1 inch maximum represents about 10 pounds of fat.

HOW FIT ARE YOU REALLY? How efficient are your lungs?

- Accurate measurement of lung efficiency requires a laboratory test, but the following simple checks will prove a rough guide.
1. Take a deep breath and time how long you can hold your breath.
 2. Breath in and out as deeply as you can; measure your chest in each position.

Your lungs are probably working with adequate efficiency if you can hold your breath for 45 seconds or more and if the difference between the two chest measurements is 2 to 3 inches or more.

TEST YOUR FITNESS Check your respiratory system:

Distance of candle from your mouth	Respiratory system age
1.5 meters	20 years
1.25 meters	30 years
1 meter	40 years
0.75 meter	50 years
Up to 0.75 meters	Over 60 years

TEST YOUR FITNESS, How mobile is you?

How close you can get to the floor	How old your ligaments are
You can put your hands flat on the floor	20 years old
You can touch the floor with your finger tips	30 years old
You can get within 10 centimeters	40 years old
The gap is 20 centimeters or more	50 years and older

TEST YOUR FITNESS; Check your sense of balance:

Time in seconds	Ability of balancing
Over 51 seconds	20 years
41-50 seconds	30 years
31-40 seconds	40 years
25-30 seconds	50 years
Less than 25 seconds	Over 60 years

Compare Sportsmen to non-sportsmen

S. No.	Particular	Non-sportsmen	Sportsmen
1	Stroke Volume	70 ml Approximately	100-125 ml
2	Resting Pulse Rate	70 beats per minute	36-50 beats per minute
3	Cardiac Output	15 liters during medium workout	25-30 liters during medium workout
4	Active Alveoli	80 %	95-98%
5	Breathing Rate per minute	14 to 18 times a minute	8 to 10 times a minute
6	Volume of Oxygen Uptake Capacity (VO ₂ max)	45 ml/kg/min	65-92 ml/kg/min
7	Bone density	Lower	Higher
8	Capillarization	Lower	Higher
9	Muscle Mass	Lower	Higher
10	Lung Capacity	Lower	Higher

Modern Work Concept: Do You Have 9am Effect At 6pm?

Exercise for all – just spare few minutes:

“Do you have 9am affect at 6pm”?

Try This.....

Spare just 3 minutes in an hour for you

- 1. Neck (Sitting on chair) – forward bend, backward stretch; left side bend, right side bend; left side turn, right side turn; semicircular rotation on front and back side – 4 to 8 times each**

(Muscles involved – All neck muscles which support neck joint – Sternocleidomastoid)

- 2. Fingers (Sitting on chair) – tighten and loosen your fingers keeping hands forward – fist close and open – 8 times**

(Muscles involved – All muscles of forearm from smallest to biggest – extensors, flexors, pronators and supinators)

- 3. Wrist (Sitting on chair) – rotation inward and outward – 8 times each side**

(Muscles involved – All muscles of forearm - extensors, flexors, pronators, supinators and rotators)

- 4. Elbow (Sitting on chair) – flexion and extension – 8 times each**

(Muscles involved – All muscles of upper arm – Biceps, Triceps, anterior Deltoid, pectoralis major)

- 5. Shoulder/ short-arm (Sitting on chair) – rotation forward and backward –Drawing big circle with elbow in air – 8 times each**

(Muscles Involved – All muscles of shoulder joint, chest and back – Deltoid group, Scapularis, Pectoralis, Teres, Trepizius)

- 6. Trunk (Standing position) – later flexion and extension left and right side keeping hands on waist – 4 times each**

(Muscles Involved – All muscles of lateral side of torso – internal and external oblique)

- 7. Trunk (Standing position) – turning towards left and right keeping hands on waist - 4 times each**

(Muscles Involved – All muscles of lateral, anterior and posterior of torso – internal and external oblique, rectus abdominis, spinae group)

8. Trunk (Standing position) – forward bend with torso straight looking forward and stretching backward looking back keeping hands on waist – 4 times each

(Muscles Involved – All muscles of lateral, anterior and posterior of torso – internal and external oblique, rectus abdominis, spinae group and gluteus group)

9. Knee – half squat –getting up from the chair and sitting on the chair – 8 times

(Muscles involved – All muscles of quadriceps, hamstring, gastrocnemius, gluteus group, Sartorius)

10. Ankle (Sitting on chair) – Planter flexion: pointing toes away from legs and Dorsi flexion: pulling toes toward legs – 8 times each

(Muscles involved - All muscles of quadriceps, hamstring, gastrocnemius, Sartorius)

11. Ankle (Sitting on chair) – Rotation of both ankles inside and outside sitting on the chair – 8 times each

(Muscles involved - All muscles of quadriceps, hamstring, gastrocnemius, Sartorius)

12. Toes (Sitting on chair) – flexing and extending toes – 8 times each

(Muscles involved – All smaller and fine muscles holding metatarsals)

“Do you have 9am affect at 6pm”?

Try This.....

Spare just 3 minutes in an hour for you

1. Neck (Sitting on chair) – forward bend, backward stretch; left side bend, right side bend; left side turn, right side turn; semicircular rotation on front and back side – 4 to 8 times each
2. Fingers (Sitting on chair) – tighten and loosen your fingers keeping hands forward – fist close and open – 8 times
3. Wrist (Sitting on chair) – rotation inward and outward – 8 times each side
4. Elbow (Sitting on chair) – flexion and extension – 8 times each

5. Shoulder/ short-arm (Sitting on chair) – rotation forward and backward –Drawing big circle with elbow in air – 8 times each
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Profitable deal of just sparing 3 minutes for simple work out

- Mobilize 30% of muscles and increase muscle tone,
- Increasing 30% increase in circulation of oxygen and nutrition to the body
- Avoiding hypo-kinetic diseases viz. high blood pressure, diabetes mellitus, joint problems etc.
- costing you just 24 minutes out of 1440 minutes of the day
- overall increase in outcome by 30% is a very profitable deal,
- Overall psychological boost,
- So deal it!

Start today!

References:

COWELL, CHARLES C. and FRANCE, WELLMAN L. “Philosophy and Principles of Physical Education”; Prentice Hall Inc., Englewood Cliffs, New Jersey.

D. ALLEN PHILLIPS AND JAMES E. HORNAK JOHN WILEY AND SONS “Measurement and Evaluations in Physical Education”; New York, Chi Chester, Brisbane, Toronto, (1979), 16 to 19.

DEVINDER, K. KANSAL, “Test and Measurements in Sports and Physical Education”, D.V.S. Publication, New Delhi- “Identification of Fitness and Motor Ability Terms” (1996), 108-19.

H. Harrison Clarke, “Application of Measurement to Health and Physical Education”, fifth edition, (1976), 78.

MARK HARRIES, CLYDE WILLIAMS, WILLIOAN, D. STANISM, and LYLE, J. MICHELI: “Oxford Textbook of Sports Medicine”, Oxford University Press (1996); 4.

NIXON, JOHN E., JEWETT, ANN, E., “An Introduction to Physical Education”, W.B. Saunders Company; Philadelphia, London.

SHAPIRA, W., “Competing in a Silent World of Sports,” Physician and Sports Medicine (1975); 3: 99-105.