STUDY ON THE APPRECIATION OF THE LEVEL OF PHYSICAL CONDITION IN ADULTS

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Summary: The research hypothesis is based on the assumption that the factors of the physical condition under evaluation are in accordance with the level of growth and development of the tested subjects. The object of the research is the model of physical condition of the students from the final year of FPEMS. The purpose of the research is the continuous improvement and guidance of the content of the preparatory lessons in order to maintain an optimal level of physical condition, necessary to fulfil the requirements of the school program. The practical value of the research consists in the possibility to elaborate training models, by allowing the specialists to select the most effective factors that influence the level of physical condition.

Keywords: tests, physical condition, Eurofit

Introduction

The physical condition is the capacity to withstand, to successfully cope, both with the possible challenges and with those present in daily life [10].

A translation of the Anglo-Saxon word "physical fitness", the physical condition can be considered as the acquisition by an individual of a level of physical ability that gives them the possibility to perform an exercise, some sport or a constant daily activity.

Fleisman defines physical condition as the individual's ability to succeed in certain classes of activities that require muscle activity [5, 6].

Bouchard defines physical condition as the optimal combination of the physical, biological, biochemical, biomechanical characteristics meant to function in a satisfactory way in a muscular activity [2].

Legido considers physical condition as being "an ensemble of organic, anatomical and physiological qualities or conditions that an individual must have in order to be able to perform a certain amount of physical effort in both sporting and daily activities [8].

From the enumeration and analysis of the points of view referring to the physical condition it is considered that while, for the coaches, physical condition is synonymous with the performance, they always want to have as many means and methods as possible to allow a certain level of physical effort, without any negative effect on their health. The teachers select the most suitable

methods and means for the physical education class, the objective being the physical training of the students in order to achieve competences and abilities and to maintain an optimal state of health.

For Alvarez del Vilar physical condition represents a general concept, being defined as the success of the human body to oppose the unilateral muscular activity that unites the professional activity with other ordinary movements or positions [3].

Merhatova and Macek consider that physical condition results from "the totality of personal conditions that allow an optimal reaction when performing a difficult physical activity, taking into account the influence of external factors" [9].

The Committee of Experts of the Council of Europe considers physical condition to be the ability of the body to carry out daily activities with vigour, without accentuated tiredness, by conserving enough energy to perform free time activities and to deal with unusual situations and emergencies [11].

The identification and description of the components of the physical condition (fitness) is an important topic for specialists in the field. E. Fleishman (1964) quoted by M. Epuran (2005) identifies 9 factors, the tests being performed on the field, without complex equipment: flexibility in extension, dynamic flexibility, explosive force, static force, dynamic force, trunk force, general body balance, general coordination, stamina (cardiovascular endurance) [7].

APPENDIX TO RECOMMENDATION No. R(87)9 of the Committee of Ministers on Eurofit physical aptitude test, May 19, 1987.

EUROFIT physical fitness tests

Identification data	NAME SURNAME	Age (years, months)	
		Gender (m / f)	
Anthropometric measures		Waist (cm)	
		Weight (kg)	
		Body fat, five skin folds: biceps, triceps, sub-scapular, supra-iliac, maleolar (mm).	
Dimension Evaluated skills / competencies,	*Factor*	*EUROFIT test Evaluation tools*	
Cardio-respiratory resistance m	Cardio-respiratory resistance	Endurance shuttle race (min / sec), Ergometric bike test (min / sec),	9
Force n s	Static force	Manual dynamometry (kg),	5
	Explosive force	Long jump without momentum (cm),	4
Muscular endurance u i	Functional force	Suspended bent arm (sec),	7
	Strength of the trunk	Lifting from the sitting position (no / 30sec),	6
Speed ș	Speed of coordination	Race 10 X 5m (sec),	8
	Member speed	Hitting the plates (sec),	2
Flexibility	Flexibility	Torso flexion forward, in the sitting position (cm),	3
F *balance* T	General balance	Flamingo balance test (sec).	1

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Table 1. Factors that influence the level of physical condition related to the Eurofit test battery [Adam et al., 1992, Eurofit].

Material and method

The program includes percentile masses on the Eurofit test battery, for both sexes, as well as the introduction of new tests and test batteries, and the modification of the existing ones.

The test battery contains 10 tests for the evaluation of 9 (nine) factors that influence the level of the physical condition, all of them measure the level of the physical condition related to the motor range (coordination, power, skill, speed, balance), 5 (five) of them being directly related to the health status [Adam et al., 1992, Eurofit].

Along with the motor tests, the battery of tests includes measurements of anthropometric indicators and data for the identification of those tested.

The statistical-mathematical indicators that were used in the analysis of the data obtained by measurement were: ⁻X- arithmetic average, σ-standard deviation, W-amplitude.

The measurement was performed throughout the research to determine the level of capabilities, factors and evaluation tools as follows:

General balance = FLAMINGO balance test

Speed of repetition in the upper limbs = reaching the circles,

Flexibility/ mobility = while sitting, outstretching hands,

Lower limb explosive force = long jump without momentum,

Static force upper limb = dynamometry of upper limb,

Abdominal muscle strength and resistance = repeated returning lifting of the trunk

Strength and muscular strength in the arms and hands = keeping the arms bent from hanging to a fixed bar,

Travel speed, speed = RACE 10X5m

Cardio-respiratory endurance = RACE 12X40m.

Research results

By applying the specific balance assessment tools, when testing Eurofit, it results in an arithmetic average of 3.40 sec, a number of 5 subjects have values above average and 15 subjects have values below average and the amplitude has the value of 10 sec (Table 2, Graph 1).

When testing the speed of repetition of the upper limbs, touching the circles, the value is 8.07 sec, due to the values of 0 sec of two subjects (7 and 10), (Table 2, Graph 2).

When testing the sitting mobility, outstretching hands, the arithmetic average of 5.60 cm has lower values in 8 subjects while 12 subjects have higher values, at an amplitude level of 47cm. which is influenced by negative values (4, 9, 12, 17, 19) (Table 2, Graph 3).

Testing to determine the level of explosive force at the level of the lower limbs, the long jump without momentum has an average value of 2.27m, the amplitude being 50cm (Table 2, Graph 4).

The strength of the palm flexors tested by means of the dynamometer has average values of 49.85 kg / f, 9 subjects above average values, and 11 subjects have values above average, the amplitude being 36 kg / f. (Table 2, Graph 5).

The lifting of the trunk from dorsal lying in 30 seconds has average values of 30.55 repetitions, of which 9 subjects have values above the average, while 11 subjects have values below the arithmetic mean, the amplitude being 18 (Table 2, Graph 6).

For testing the determination of the strength and resistance at the level of arms and shoulders the hanging test with the arms bent was used, the arithmetic mean is 52.80 min/ sec, 7 subjects have values above the mean, while 13 subjects have values below the arithmetic mean value of the amplitude being 82 sec (Table 2, Graph 7).

TABLE 2 TEST RESULTS

|	N.P.	FLA-MINGO BALANCE (no. of points)		TOUCH CIRCLES (sec/25cycles)		STRETCH HANDS (cm+,-.)		LONG JUMP WITHOUT MOMENTUM (cm.)		STRENGTH OF PALM FLEXORS (kg/f)		TRUNK LIFTING FROM DORSAL LYING (nr/30sec.)		BENT ARM HANGING (min/sec)		RACE 10X5m (sec.)		RACE 24X20m (min/sec.)		TO-TAL
		R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	R	P	
1	RA	10	10	9.7	40	+2	20	2.30	80	60	100	33	80	40	60	12.2	50	2.35	50	480
2	DM	2	90	10.3	20	+8	50	2.30	80	54	90	22	0	70	100	12.2	50	2.25	70	550
3	EV	3	80	8.6	70	+6	40	2.10	40	38	60	32	70	111	100	12.0	60	2,14	90	590
4	RV	3	80	8.2	80	0	0	2.10	40	40	60	33	80	50	80	12.2	50	2.24	70	540
5	AD	2	90	8.0	90	+10	60	2.30	80	52	90	30	50	48	80	12.9	30	2.27	70	640
6	BB	10	10	9.6	10	+14	80	2.30	80	50	80	30	40	49	80	12.9	30	2.42	40	450
7	I.N	3	10	8.3	80	+10	60	2.30	80	56	90	29	50	33	50	12.9	30	2.25	70	500
8	GG	10	60	0	10	+21	100	2.20	60	64	100	30	60	54	90	12.0	60	2.25	70	610
9	VM	5	100	9.5	40	0	0	2.20	60	48	70	31	80	43	70	12.0	60	2.25	70	550
10	CO	0	70	0	10	+7	50	2.50	100	65	100	33	80	56	90	11.8	70	2.11	100	670
11	BM	4	80	3.7	60	+5	30	2.40	90	60	100	40	50	78	100	11.4	70	2.12	100	660
12	LM	3	100	10.2	30	-5	0	2.30	80	30	40	30	60	68	100	12.3	40	2.29	60	510
13	TB	0	90	12.2	0	+10	60	2.30	80	31	40	31	40	67	10	12.2	50	2.06	100	470
14	BR	2	90	8.7	60	+6	40	2.00	20	29	40	29	30	29	40	12.6	40	2.25	70	430
15	CP	2	80	9.2	50	+10	60	2.50	100	60	100	28	50	45	70	13.6	20	2.32	60	590
16	TC	3	80	9.7	40	+20	100	2.40	90	58	100	30	40	33	50	12.5	40	2.10	100	640
17	AM	0	10	8.4	80	-26	0	2.10	40	58	100	29	40	48	80	13.1	20	2.27	70	440
18	SB	1	100	10.0	30	+12	70	2.10	40	44	70	30	50	46	70	12.5	40	2.50	20	490
19	NO	2	90	8.1	90	-11	0	2.30	80	45	70	31	60	40	60	12.9	30	2.55	10	490
20	PA	3	80	9.0	40	+13	80	2.35	90	55	90	30	50	48	80	12.5	40	2.45	30	580
	X̄	3.40	70.00	8.07	46.50	5.60	45.00	2.27	70.5	49.85	79.5	30.55	53.0	52.80	73.00	12.37	44.0	2.28	66.0	546.0
	σ	3.04	31.46	3.10	27.98	10.3	32.48	0.13	22.4	11.05	21.3	3.15	19.2	18.35	22.61	0.43	14.6	0.13	25.3	73.10
	w	10	90	12.2	90	47	100	0.5	80	36	60	18	80	82	90	1.7	50	0.49	90	240
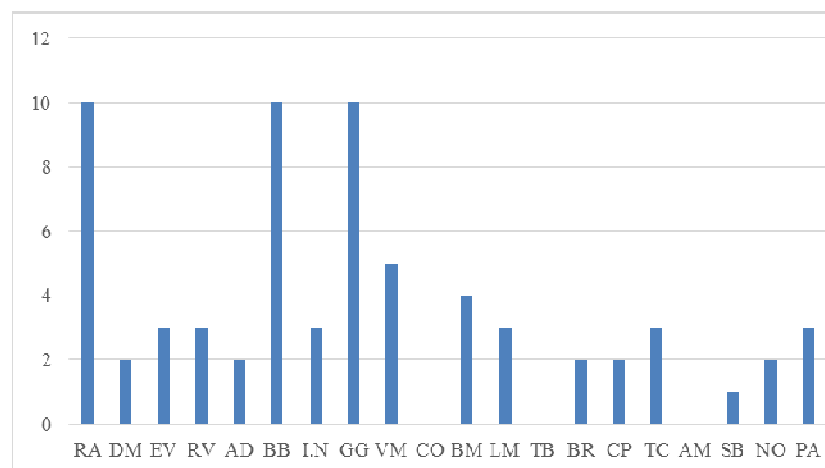
Graph 1. Results of **Flamingo** balance testing **(no/sec)**
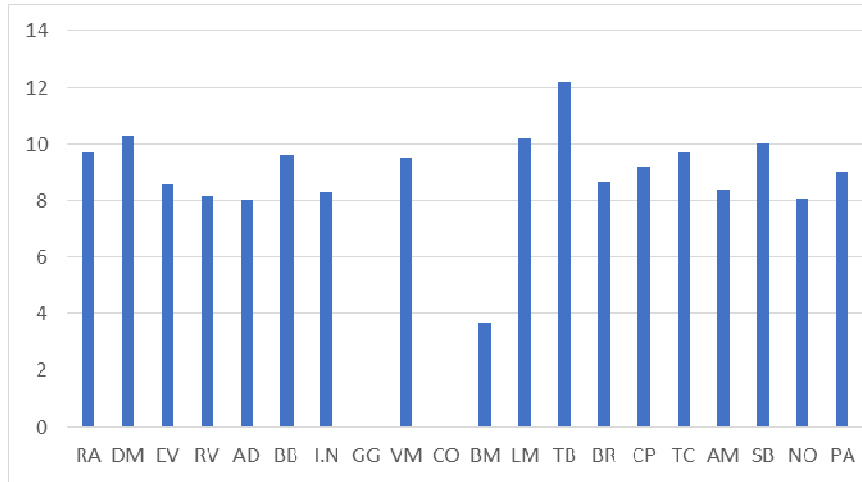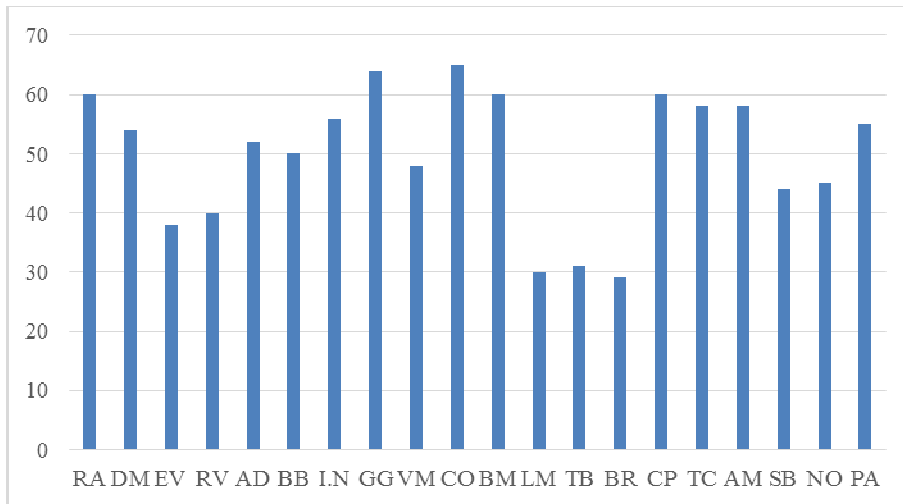
Graph 2. Results when testing **touch the circles (sec/25 cycles)**
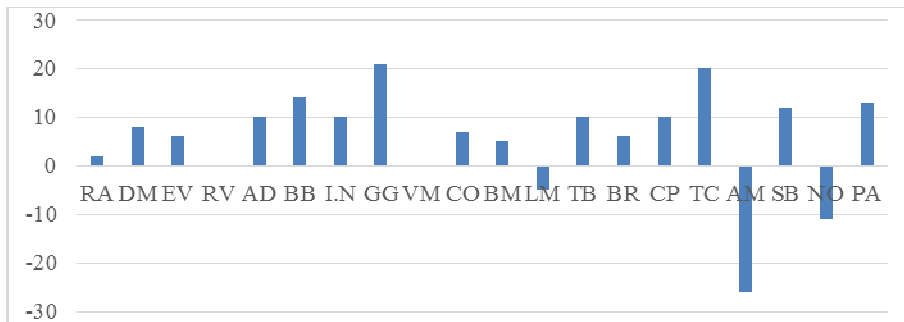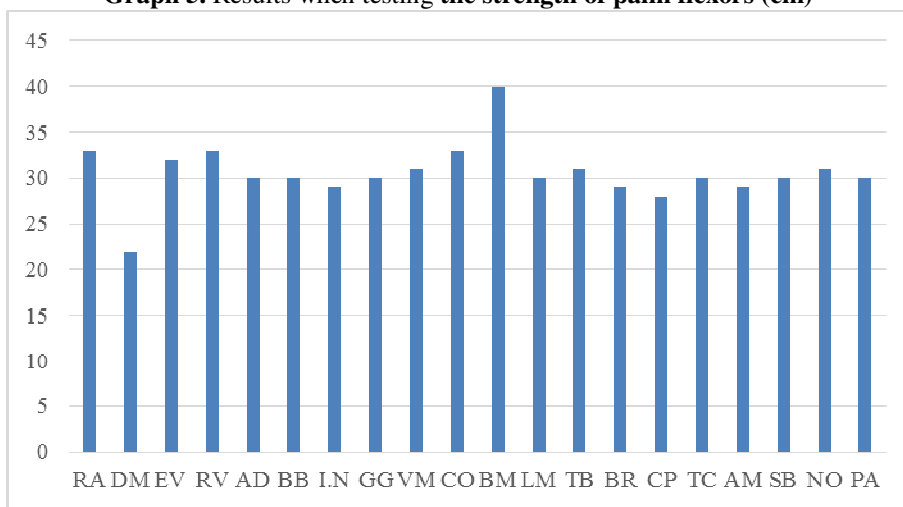

Graph 3. Results when testing **stretch the arms (+,-)**
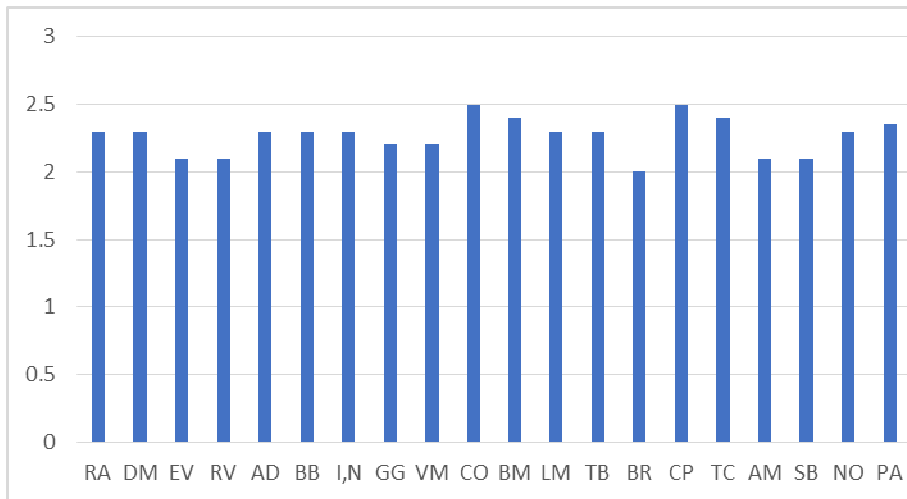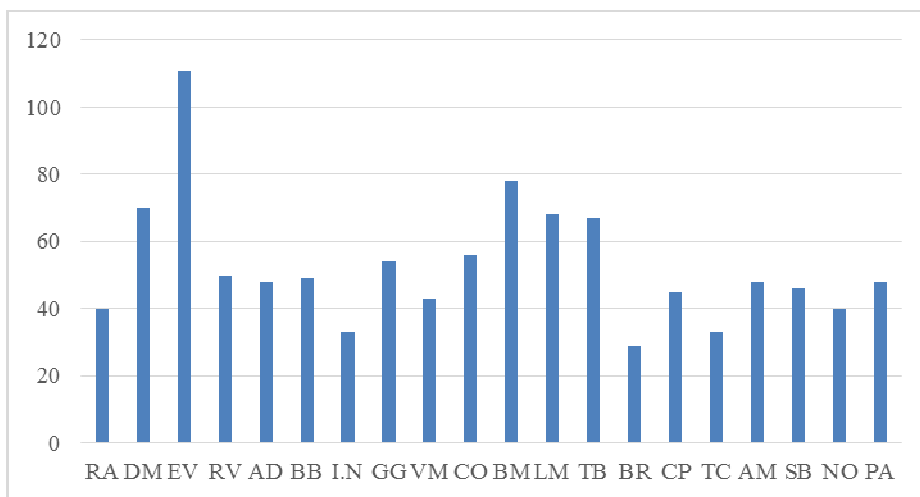

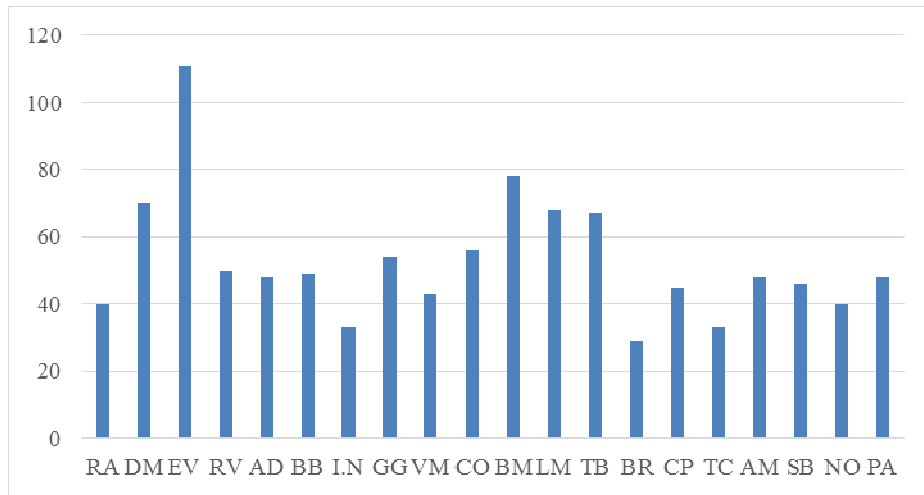**Graph 4.** Results when testing **long jump without momentum (cm)**

Graph 5. Results when testing **the strength of palm flexors (cm)**

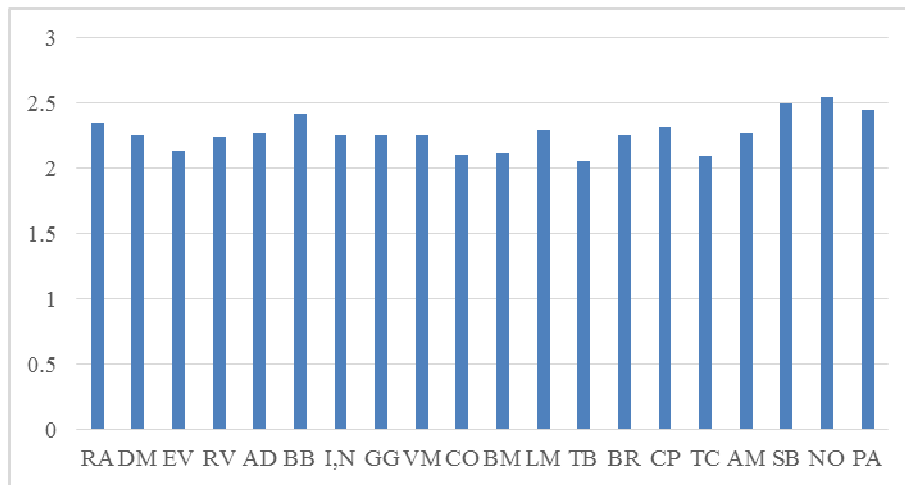**Graph 6.** Results when testing **trunk lifting from dorsal lying (no./30sec).**

Graph 7. Results when **maintaining bent arm hanging (min/sec)**

Graph 8. Results when testing **race 10x5m(sec)**

Graph 9. Results when testing **race 24x20**(min/sec)

Travel speed/ speed was tested by using the 10x5m race, the arithmetic mean of 12.37sec being exceeded by 9 subjects, 11 subjects being below the mean level, the amplitude level being 1.7 sec. (Table 2, Graph 8).

Cardio-respiratory resistance tested by using the 24x20m race (min/ sec) gives an average value of 2.28min, 7 subjects performing above the arithmetic mean level, 13 performing below average level at an amplitude value of 49 sec (Table 9, Graph 9).

Conclusions

By analyzing the results of the EUROFIT battery test at the level of the subjects, it is noticed that for a number of 5 tests the results are above the average of the tested subjects while the results in 4 tests are below the average.

Given the fact that the average of the subjects with results above the average of the sample for Eurofit battery is 5 (1, 3, 4, 5 and 9), it can be estimated that the tests 6 and 8 are close to these

values, the physical condition factors evaluated are consistent with the level of growth and development of the tested subjects.

The absence of programs by which young people at this age should be aware of the negative effects of a low level of physical condition, as well as of methods and means of coping with specific requests.

Recommendations

The assessments regarding the level of physical condition at the level of young people should be correlated with that of the environmental and social factors.

In the situation when it is found out that a part of the young people do not meet the imposed requests, they will be integrated into appropriate training groups in order to improve the level of physical condition.

In order to achieve objective results as well as for an optimal level of physical condition, the tests will be performed and communicated to the tested ones twice a year.

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