

# MOST USED COMBINED MULTISUPPLEMENTS CONTAINING L – ARGININE

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**Summary.** L – Arginine is an essential, proteinogenic amino acid and is involved in metabolic pathways, such as protein degradation, synthesis of creatine, citrulline, L – ornithine, L – glutamate, agmatine, proline, polyamines, urea, etc. The aims of the current study were: 1) to collect data for manufactured combined supplements, containing L – Arginine; 2) to analyse the collected data; 3) to estimate the number of multipreparations with L – Arginine, according to their form; 4) to summarize which are the most common combined supplements with L – Arginine. The performed observational study showed that in most cases L – Arginine was combined with: L – Citrulline, L – Glutamic acid, L – Lysine, L – Ornithine and Vitamin B6.

**Key words:** L – Arginine, HPLC, accuracy, precision, linearity

## INTRODUCTION

The consumption of food supplements and their importance in people's daily life are constantly increasing. [11, 12] According to the Natural Medicines Comprehensive Database the effectiveness ratings for L – Arginine are as follows [7]: I) possibly effective for: 1) chest pain associated with coronary artery disease and bladder inflammation [8, 13]; 2) lowering blood pressure in young cardiac transplant recipients by vasodilatation [1, 10] and in patients with gestational hypertension [3]; 3) elimination of extra fluids in congestive heart failure; 4) preventing of: a) heart and circulatory diseases; b) loss of effect of nitroglycerin in people with angina pectoris [13]; c) inflammation of the digestive tract in premature infants [8, 13]; 5) reducing: a) wound healing, recovery time and the

number of infections after surgery in combination with ribonucleic acid and eicosapentaenoic acid; b) cramping pain and weakness in the legs associated with blocked arteries (intermittent claudication); 6) improving: a) immune system in combination with hydroxymethylbutyrate (HMB) and glutamine; b) kidney function in kidney transplant patients taking cyclosporine; c) small – vessel coronary endothelial function in humans [6, 10]; 7) increasing: a) nitric oxide levels in patients with interstitial cystitis [2]; b) body weight; c) erectile function [5]; d) total antioxidant status [13]; II) possibly ineffective for heart attack and pre – eclampsia [10]; III) promising evidence to rate effectiveness for: 1) improving: breast cancer (in combination with chemotherapy), immune system in people with head and neck cancer, lung inflammation [8], migraine headache in a combination with ibuprofen [9], senile dementia [13]; 2) preventing from: sepsis [8], common cold, diabetic foot ulcers, male infertility, sickle cell disease [13].

The aims of the current study were as follows: 1) collection of data for manufactured combined supplements, containing L – Arginine; 2) analysis of summarized data; 3) estimation of the part of different dosage multipreparations with L – Arginine; 4) summarizing the most common combined supplements with L – Arginine.

## **MATERIALS AND METHODS**

We used the following approach in the evaluation of trade multisupplements with L – Arginine: 1) collection of data for manufactured combined supplements, containing L – Arginine; 2) analysis of the summarized data; 3) estimation of the number of multipreparations with L – Arginine, according to their form; 4) summarizing the most common combined supplements with L – Arginine.

## **RESULTS AND DISCUSSION**

### **I. Assessment of trade multisupplements with L – Arginine.**

An observation of data for all authorized for sale supplements in the world, containing L – Arginine, is described. The investigation has been made through the existing electronical database of medical sources [4].

The study covers analysis of collected data, comprising the results for the part of distribution of different multicomponents with L – Arginine and estimation of percentage of the most common combinations.

The collected data include 345 trade multisupplements, containing L – Arginine. From results pointed out in Tables 1 – 9, it is obvious, that L – Arginine is manufactured in different dosages and formulations: powders (Table 1, Table 2, Table 3); effervescent sachets, solutions, infusions, gels, coated tablets and effervescent tablets (Table 4); tablets (Table 5, Table 6) and capsules (Table 7, Table 8).

**Table 1.** Multisupplements containing L – Arginine – powders

1.	Ageless Foundation Ultra Max Gold, 22 x 17.4 g	26.	BPI Sports 1.M.R, 80 g
2.	All American EFX K – Otic, 32 x 14.28 g	27.	BPI Sports 1.M.R, 8 x 28 g
3.	All Max Nutrition Arginine, 400 g	28.	BSN NO – Xplode, 20 x 20.5 g
4.	All Max Nutrition Arginine, 1000 g	29.	BSN NO – Xplode, 50 x 20.5 g
5.	All Max Nutrition Hema Novol, 240 g	30.	Carlson L – Arginine, 1000 g
6.	All Max Nutrition Iso Flex, 30 x 30 g	31.	Cellucor C4 Extreme, 30 x 6.5 g
7.	All Max Nutrition Muscle Prime, 50 x 20 g	32.	Champion Adrenol 8, 40 x 20.5 g
8.	Amino Vital, 480 g	33.	Champion Gly Pro XTS Complete Stack, 20 x 20.7 g
9.	Amino Vital Fast Charge, 30 x 5 g	34.	Cheap Supplements Arginine, 250 g
10.	Amino Vital Pro, 20 x 24 g	35.	Controlled Labs Purple Wraath, 12.3 g
11.	AST Anabolic Rush, 38 x 26.25 g	36.	Controlled Labs Purple Wraath, 45 x 12.3 g
12.	Axis Labs Smash Fully Loaded, 30 x 20 g	37.	Controlled Labs Purple Wraath, 90 x 12.3 g
13.	Betancourt Nutrition Bullnox Androrush, 35 x 18.1 g	38.	CTD Labs L – Arginine, 454 g
14.	Betancourt Nutrition Bullnox Bull Rush, 5 x 18.2 g	39.	Cyto Sport Monster Pump, 30 x 40 g
15.	Betancourt Nutrition Bull Rush Recelerator, 28 x 31 g	40.	Dynamize ISO – 100, 28 g
16.	Beverly Int. Up – Lift, 15 x 22 g	41.	Dynamize ISO – 100, 32 x 28 g
17.	Bio Quest Fusion Force, 40 x 24.5 g	42.	Dymatize Xpand Xtreme Pump, 14 x 20 g
18.	Bio Rhythm Arnge Krush, 19.5 g	43.	Dymatize Xpand Xtreme Pump, 40 x 20 g
19.	Bio Rhythm Arnge Krush, 780 g	44.	EAS Pro Science Armor, 14 x 3 g
20.	Bio Rhythm O2 Positive, 700 g	45.	Elite Delivery Technologies Elite – KXS, 68 x 5.5 g
21.	Blue Star Nutraceuticals Extreme Rush, 850 g	46.	Epic Performance 4 – Nitro Tropic, 40 x 20.5 g
22.	Body Fortress Super Advanced Creatine High Performance, 30 x 48 g	47.	4 Ever Fit Detonator, 65 x 20 g
23.	Body Fortress Super NOS Blast, 45 x 20 g	48.	Full Combat Pre Combat, 50 x 20 g
24.	Bodystrong L – Arginine, 1000 g	49.	Garbage Garbage, 14 x 12.5 g
25.	Bodystrong L – Arginine, 2000 g	50.	Garbage Nuclear Garbage, 14 x 15 g

**Table 2.** Multisupplements containing L – Arginine – powders

1.	Gaspari Nutrition Super Pump 250, 20 g	26.	MHP Dark Rage, 20 x 44.7 g
2.	Gaspari Nutrition Super Pump 250, 280 g	27.	MHP Trac, 425 g
3.	Gaspari Nutrition Super Pump 250, 400 g	28.	MHP Trac Extreme – NO, 775 g
4.	Gaspari Nutrition Super Pump 250, 800 g	29.	Millennium Sport RPG IBCAA, 500 g
5.	Genetic Breakthrough Nutrition Plazmosis, 30 x 18.8 g	30.	Montiff Pure L – Arginine Base Powder, 150 g
6.	German American Technologies Jet Fuse NOX, 40 x 20.5 g	31.	MPR Pump, 30 x 17.6 g
7.	German American Technologies Jet Mass, 40 x 20.5 g	32.	MRI Anabolic Switch, 20 x 45 g
8.	GNC Pro Performance® Arginine, 400 g	33.	MRI Black, 800 g
9.	Higher Power BCAA AKG, 150 g	34.	MRI Black, 68 x 20 g
10.	Higher Power BCAA AKG, 120 x 2.5 g	35.	MRI NO2 Ripcuts, 20 x 12.8 g
11.	IDS Beta NOX, 680 g	36.	Muscle Fortress Muscle Spike, 45 x 7.5 g
12.	Infinite Labs Juggernaut, 40 x 20 g	37.	Muscle FX Hydrobolic FX, 75 x 30 g
13.	Isatori Morph Mega Drive, 30 x 20.84 g	38.	Muscle Gauge Nutrition Huge Impact, 35 x 66 g
14.	Iso Flex – Whey Protein Isolate, 75 x 30 g	39.	Muscle Gauge Nutrition Massive Growth, 225 g
15.	John Scott's Nitro Cell Drive, 30 x 48 g	40.	Muscle Pharm Assault, 800 g
16.	Kal L – Arginine Unflavored, 120 g	41.	Muscle Pharm Bullet Proof, 380 g
17.	LA Muscle LA Whey, 38 x 60 g	42.	Muscle Pharm Combat Powder 52 x 25g
18.	L – Arginine Plus, 30 x 12 g	43.	Muscle Pharm Recon, 40 x 30 g
19.	LG Sciences Postal, 1170 g	44.	Muscleology Nitro – Pro, 1360 g
20.	Life Extension Arginine Ornithine, 150 g	45.	Muscle Tech Anabolic Halo Hardcore Pro, 40 x 23 g
21.	Live Long Nutrition AAKG, 100 g	46.	Muscle Tech Cell – Tech Hardcore Pro, 20 x 100 g
22.	Magnum Nutraceuticals Serum, 40 x 17 g	47.	Muscle Tech Intra Vol, 32 x 30 g
23.	Metagenics Arginine Plus Magnesium, 644 g	48.	Muscle Tech NaNO Vapor Hardcore Pro Series, 50 x 18 g
24.	Metabolic Diet Power Drink, 616 g	49.	Muscle Tech Nitro Amino FX Pro Series, 385 g
25.	Met – Rx Protein Revolution, 15 x 77 g	50.	Muscle Tech Nitro – Tech Hardcore Pro, 27 x 33 g

**Table 3.** Multisupplements containing L – Arginine – powders

1.	Myogenix Hyper Shock Tactical Nitric Oxide Pre – Workout, 40 x 12 g	28.	Sci Fit Muscle Smoothie, 18 x 75 g
2.	Nimbus Nutrition Performance Protein, 900 g	29.	Sci Fit Super Nova, 908 g
3.	Now AAKG Power, 200 g	30.	Seroyal/Pharmax – L – Glutamine L – Arginine, 250 g
4.	Now Arginine Power, 454 g	31.	SNI Nitric Blast, 600 g
5.	Now Arginine Power Super Stack, 50 x 20 g	32.	Sourse Naturals L– Arginine Free, 100 g
6.	Now Pro – GH, 600 g	33.	Sports One Equalizer, 720 g
7.	NRG – X Labs Anabolic Raptor, 900 g	34.	Sports One Solid Mass, 720 g
8.	Nu Care Nitric Blast, 550 g	35.	Sport Pharma Gain Max, 16 x 170 g
9.	Nu Care Nitric Blast Extreme, 550 g	36.	Star Chem Armageddon, 920 g
10.	Nutra Bio L – Arginine Ajinomoto, 150 g	37.	Star Chem Momentum, 40 x 11 g
11.	Nutra Bio L – Arginine Ajinomoto, 500 g	38.	Swanson Premium -- Arginine AKG Lemon Flavored, 350 g
12.	Nutrabolics Anabolic Window, 12 x 92 g	39.	Syntrax Innovations Nitrous, 300 g
13.	Nutrabolics Hemorush, 50 x 20 g	40.	Thermo Life Pump – Bol, 42 x 11 g
14.	Nutrabolics NOZ I.V., 630 g	41.	Top Secret Nutrition N.O., 30 x 11 g
15.	Nutraceuticals Vivax, 20 x 8.6 g	42.	Twinlab Brewers Yeast, 31 x 16 g
16.	Nutrex Hemo – Rage Black, 45 x 20 g	43.	Twinlab Mass Fuel Xtreme, 18 x 150 g
17.	Nutrex Hemo – Rage Black Ultra Concentrate, 90 x 3.2 g	44.	Ultra Max Gold, 22 x 17.4 g
18.	Olympian Labs A – AKG, 90 g	45.	Universal Intra – Aid, 32 x 25 g
19.	Panthera Pharma VME Vaso Muscle Expander, 28 x 32 g	46.	Universal Shock Therapy, 50 x 21 g
20.	Pride Nutrition Dominate, 800 g	47.	Universal Shock Therapy, 400 g
21.	Pride Nutrition Retaliate, 780 s	48.	Universal Storm, 80 x 9.4 g
22.	Prima Force AAKG, 250 g	49.	USP Jack 3, 250 g
23.	Pro Argi – 9 Plus, 150 g	50.	USP Jack 3, 45 x 5.55 g
24.	Professional Supplements Hyperbolic 10, 36 x 27.7 g	51.	Vitol Russian Bear, 292 g
25.	S.A.N. Myotein, 1202 g	52.	Xero Limits EPOg – Blast, 20 x 14.7 g
26.	S.A.N. V – 12 Magnum, 50 x 11 g	53.	Xyience NOX – CG3, 13 x 1.7 g
27.	Sci Fit Kreation, 690 g	54.	Zipfizz Energy Drink Mix, 3 x 11.4 g
		55.	Zipfizz Energy Drink Mix, 20 x 11.4 g

**Table 4.** Multisupplements containing L – Arginine – effervescent sachets, solutions, infusions, gels, coated tablets and effervescent tablets

<b>Effervescent Sachets</b>			
1.	Newton Everett Biotech Isotropin Rejuvenation, 60 eff. sachets	3.	Nutraceuticals Medi Tropin, 60 eff. sachets
2.	Nutraceuticals Vivax, Tropical Fruit Flavor, 20 eff. sachets		
<b>Solutions</b>			
1.	Aminogame 1500, 492 ml	10.	Now Awe Slim Liquid Weight Management – Slim, 946 ml
2.	ANSI Thermo Hydroxadrine Nitric Xplosion, 591 ml	11.	Pharma Gen X Liquid Mojo, 240 ml
3.	BSN Endorush Xtreme Strength, 118 ml	12.	Premier Nutrition Nitro Shot, 54 ml
4.	Cyto Sport Fast Twitch RTD, 240 ml	13.	Sargenor 1000 mg/5 ml
5.	Cyto Sport Fast Twitch RTD, 591 ml	14.	Strength Systems USA Nitric Blast, 120 ml
6.	IDS Beta NOX, 103 ml	15.	Tonotyl, 10 ml/100 mg
7.	iSatori Liquid Morph+, 92 ml	16.	Trionix TRX – 7, 60 ml
8.	Liquid Amino 2000, 946 ml.	17.	Twinlab Amino Fuel Liquid, 450 ml
9.	MMUSA Stratos, 150 ml	18.	VPX Black Pearl RTD, 240 ml
<b>Infusions</b>			
1.	SciFit Nitrox Infusion, 30 ml		
<b>Gels</b>			
1.	AST Myog – D, 120 softgels	3.	Shocker Nutrition N.O. Extreme, 180 softgel
2.	Axis Labs Hemodraulix, 180 liquid softgels		
<b>Coated tablets</b>			
1.	Met – Rx Xtreme Nitro Pump NOS, 180 tabl.		
<b>Effervescent tablets</b>			
1.	MDR Vital Factors, 10 eff. tabl.		
2.	MDR Vital Factors, 40 eff. tabl.		
3.	Millennium Sport Nitro Ceps, 120 eff. tabl.		

**Table 5.** Multisupplements containing L – Arginine – tablets

1.	All Max Nutrition Hema Novol, 240 tabl.	21.	Doubled – T Sports NO Beta, 30 tabl.
2.	Amino 1000, 100 tabl.	22.	Doubled – T Sports NO Beta, 180 tabl.
3.	Amino 2000: L – Arginine 285 mg/L – Glutamic acid 1990 mg / L – Lysine 1040 mg, 365 tabl.	23.	Doubled – T Sports NO Beta, 360 tabl.
4.	Amino 2300, 325 tabl.	24.	Elite Delivery Technologies Nitricid – X O <sub>2</sub> , 180 tabl.
5.	Anabolic Agents Nanoxide Delivery, 240 tabl.	25.	Enzymatic Therapy HDL Booster, 120 tabl.
6.	ANSI Thermo Hydroxadrine Nitric Xplosion, 100 tabl.	26.	Gaspari Nutrition Plasma Jet, 160 tabl.
7.	ASN Maxabol II, 100 tabl.	27.	German American Technologies Sonic Pump, 180 tabl.
8.	Betancourt Nutrition Bullnox Androrush, 35 tabl.	28.	Inner Armour Amino 2000, 350 tabl.
9.	Betancourt Nutrition Bullnox Androrush, 175 tabl.	29.	IronMagLabs Nitro4, 90 tabl.
10.	Beverly Int. Mass, 500 tabl.	30.	Isatori Morph GXR – 3, 90 tabl.
11.	Beverly Int. Muscle Synergy, 240 tabl.	31.	Isatori Morph GXR – 3, 180 tabl.
12.	Biochem Max – Amino, 180 tabl.	32.	ISS Research Satur 8 Nitric Oxide, 180 tabl.
13.	Body Fortress Super NOS Pump, 90 tabl.	33.	Jarrow Formula Arginine 1000 mg, 100 tabl.
14.	Brain Pharma Happy Pills, 60 tabl.	34.	Kal Amino Acid Complex 1000 mg, 100 tabl.
15.	BSN Epozined – O <sub>2</sub> NT, 180 tabl.	35.	LA Muscle Vasculator, 90 tabl.
16.	BSN Nitrix, 180 tabl.	36.	L – Arginine/L – Citrulline Complex, 60 tabl.
17.	Cel Edged – NO, 180 tabl.	37.	L – Arginine/L – Citrulline Complex, 120 tabl.
18.	Champion Adrenol 8, 90 tabl.	38.	L – Arginine/L – Citrulline Complex, 240 tabl.
19.	Cobal – M: L – Arginine 30 mg/ L – Glutamic acid 100 mg, 10 tabl.	39.	Life Extension GH Pituitary Support Day Formula, 120 tabl.
20.	Doubled – T Sports Nitro Mine, 360 tabl.	40.	Mega – Pro Amino 2200 mg, 325 tabl.

**Table 6.** Multisupplements with L – Arginine – tablets

1.	Mega – Pro Super Amino, 90 tabl.	21.	Panthera Pharma Primal Pump, 180 tabl.
2.	Met – Rx Hardcore Amino 3000, 180 tabl.	22.	Pure Essence Virility For Men, 60 tabl.
3.	Metabolic Diet Antiox Version 4, 180 tabl.	23.	STS Pro Muscle Nitric, 90 tabl.
4.	Metabolic Diet GH Boost Version 4, 150 tabl.	24.	Twinlab Amino Fuel, 60 tabl.
5.	Metabolic Diet Lipo Flush, 120 tabl.	25.	Twinlab Amino Fuel, 150 tabl.
6.	Metabolic Diet Testo Boost, 120 tabl.	26.	Twinlab Amino Fuel, 250 tabl.
7.	Metabolic Diet Thermocell 35, 120 tabl.	27.	Twinlab Nitric Fuel, 180 tabl.
8.	Michael's Testosterone Factors, 90 tabl.	28.	Ultimate Nutrition Amino 2000, 325 tabl.
9.	Now AAKG 3500 mg, 180 tabl.	29.	Ultimate Nutrition Amino Gold 1000 mg, 250 tabl.
10.	Now L – Arginine 500 mg, 120 tabl.	30.	Ultimate Nutrition Amino Gold 1500 mg, 325 tabl.
11.	Now L – Arginine 1000 mg, 120 tabl.	31.	Ultimate Nutrition Super Amino 2000 mg, 150 tabl.
12.	NPS Vir Max E2, 60 tabl.	32.	Ultimate Nutrition Super Amino 2000 mg, 330 tabl.
13.	Nutrabolics Hemotropin, 90 tabl.	33.	Universal 100 % Amino, 200 tabl.
14.	Nutrifacts Complete: L – Arginine 10 mg/ L – Glutamic acid 100 mg/L – Lysine 50mg/ Vitamin B <sub>6</sub> 3 mg, 50 tabl.	34.	Universal 100 % Amino, 400 tabl.
15.	Optimum Superior Amino 2222 mg, 160 tabl.	35.	Universal Amino 2700 mg, 120 tabl.
16.	Prolab Amino 2000 mg, 325 tabl.	36.	Universal Amino Tech, 375 tabl.
17.	Source Naturals L – Arginine/L – Citrulline Complex, 120 tabl.	37.	Universal GH Max, 180 tabl.
18.	Spectrient: L – Arginine 9 mg/L – Glutamic acid 31 mg/L – Lysine 5 mg/Vitamin B <sub>6</sub> 5 mg, 100 tabl.	38.	Vita Life 100 % Amino 2000 mg, 250 tabl.
19.	Sport Pharma Amino Max, 325 tabl.	39.	Vitol Russian Bear, 140 tabl.
20.	Super Amino 2000: L – Arginine 37 mg/ L – Lysine 212 mg/L – Glutamic acid 334 mg, 365 tabl.	40.	Xero Limits Eponox, 180 tabl.

**Table 7.** Multisupplements with L – Arginine – capsules

1.	Ageless Foundation Ultra MAX Gold, 90 caps.	21.	Fusion Bodybuilding Sleeping – Giant, 240 caps.
2.	Applied Nutraceuticals RPM, 110 caps.	22.	Healthy'N Fit Advanced GH Enhancers, 90 caps.
3.	Applied Nutraceuticals RPM, 240 caps.	23.	Healthy'N Fit Advanced GH Enhancers, 180 caps.
4.	Beast Sports Nutrition Predator Rapid Release, 240 caps.	24.	Labrada Re Charge, 200 caps.
5.	Beast Sports Nutrition Super Test, 180 caps.	25.	L – Arginine 500 mg/B <sub>6</sub> , 50 caps.
6.	Beverly Int. GH Factor, 180 caps.	26.	L – Arginine 500 mg/B <sub>6</sub> , 100 caps.
7.	Big Nutrition Ada Lift, 90 caps.	27.	L – Arginine 500 mg/L – Citrulline 250 mg, 120 caps.
8.	Bio Rhythm Big Blue, 200 caps.	28.	L – Arginine 500 mg/L – Ornithine 250 mg, 100 caps.
9.	Controlled Labs White Blood, 90 caps.	29.	L – Arginine 1000 mg/L – Ornithine 1000 mg, 300 caps.
10.	Country Life – Arginine/L – Ornithine, 180 caps.	30.	L – Arginine 500 mg/L – Ornithine 500 mg/B <sub>6</sub> , 60 caps.
11.	Daily Wellness Company Argin Max For Men, 180 caps.	31.	L – Arginine 500 mg/L – Ornithine 500 mg/B <sub>6</sub> , 90 caps.
12.	Daily Wellness Company Argin Max For Women, 180 caps.	32.	L – Arginine 500 mg/L – Ornithine 500 mg/B <sub>6</sub> , 180 caps.
13.	Dymatize Energized Xpand, 240 caps.	33.	LG Sciences I – GH – 1, 100 caps.
14.	EST Plasmatic, 96 Lipof – Matic gels, 96 caps.	34.	Magnum Nutraceuticals Ac – Bomb, 180 caps.
15.	4 Ever Fit AKG2, 240 caps.	35.	MHP Anadrox, 112 caps.
16.	4 Ever Fit L – Arginine 500 mg, 180 caps.	36.	MHP Anadrox, 224 caps.
17.	FTH Nutraceuticals Healthy Heart PM, 120 caps.	37.	Mus – L – Blast 2000 Supplement Facts: L – Arginine 325 mg/L – Glutamic acid 1855 mg, 100 caps.
18.	Fusion Bodybuilding Agent – M, 120 caps.	38.	Muscle Fortress Vasoc – Pump Hot Start, 180 caps.
19.	Fusion Bodybuilding Shut – Eye, 120 caps.	39.	Muscle Juice Supplement Facts: L – Arginine 371.25 mg/L – Glutamic acid 2743.25 mg, 100 caps.
20.	Fusion Bodybuilding Sleeping – Giant, 120 caps.	40.	Muscle Tech Alpha Amino Prototype 216, 120 caps.

**Table 8.** Multisupplements with L – Arginine – capsules

1.	Muscle Tech Myo Shock HSP, 140 caps.	21.	Sci Fit Kreation, 120 caps.
2.	Muscle Tech NaNO Vapor Hardcore Pro Series, 150 caps.	22.	Sci Fit Kreation, 240 caps.
3.	Muscle Tech NaNO X9, 180 caps.	23.	Sci Fit L – Arginine 500, 100 caps.
4.	Muscle Tech NaNO X9 Hardcore, 30 caps.	24.	Six Star Muscle Professional Strength Nitric Oxide Overdrive, 100 caps.
5.	Natrol L – Arginine, 1000 mg, 50 caps.	25.	Snac Aerobitine, 120 caps.
6.	Now Arginine/Citrulline, 120 caps.	26.	SNS Arginine E2 Matrix - 180 Caps
7.	Now Arginine/Ornithine, 250 caps.	27.	Sports One Equitest, 120 caps.
8.	Now Arginine Power Super Stack, 120 caps.	28.	Sports One Ethylsterol, 120 caps.
9.	Now Tri – Amino, 120 caps.	29.	Sports One HGHD – XS, 120 caps.
10.	Nutrabolics Skin-Bursting Stack, 60 capss	30.	Super Amino 2222: L – Arginine 90 mg/ L – Glutamic acid 370 mg, 100 caps.
11.	Olimp AAKG Extreme - Arginine – 120 Caps	31.	Super Amino 4800: L – Arginine 181.5 mg/L – Lysine 271.5 mg/ L – Glutamic acid 640.5 mg, 100 caps.
12.	Olympian Labs Arginine/Ornithine, 100 caps.	32.	T-Max Dual Anabolic System 90 caps
13.	Palo Alto Labs Paravol, 60 caps.	33.	TSN Labs NO3X Extreme A – AKG, 550 mg, 120 caps.
14.	Pro Blend 55 Supplement Fact, L – Arginine 818.5 mg/L – Glutamic acid 4709.4 mg, 100 caps.	34.	TSN Labs NO3X Extreme A – AKG, 800 mg, 200 caps.
15.	Pro Card Nutrition GH Accelerator, 100 caps.	35.	Twinlab L – Arginine 500 mg, 100 caps.
16.	Pro Card Nutrition Kre Oxi Pump, 120 caps.	36.	Twinlab L – Arginine/L – Ornithine, 100 caps.
17.	Pro Fight Amino Sports 4500 mg, 180 caps.	37.	Ultimate Nutrition Amino Gold 1000 mg, 250 caps.
18.	Pro Rx Labs X Fuel, 180 caps.	38.	Ultimate Nutrition Arginine Power, 100 caps.
19.	S.A.N. CM2 Nitrate, 240 caps.	39.	Ultimate Nutrition Arginine/Ornithine/ Lysine, 100 caps.
20.	Sci Fit Endurd – O2 + Kreation, 120 caps.	40.	Ultimate Nutrition Arginine/Pyroglutamate/ Lysine, 750mg, 100 caps.
		41.	Vigor Labs Chainsaw, 30 caps.

The distribution of dosage multisupplements, containing L – Arginine as percentage from all analyzed 345 preparations is summarized in Table 9: powders: 44.93%, capsules: 23.48%, tablets: 23.19%. Data for tablets and capsules are analyzed and the percentage of most commonly saled combinations with L – Arginine: L – Citrulline, L – Glutamic acid, L – Lysine, L – Ornithine and Vitamin B<sub>6</sub> are obtained.

Table 9. Distribution of number of multisupplements, containing L – Arginine, according to their form

N :	Form of multisupplements	Number	% from all 345 multisupplements
1.	Powders	155	44.93
2.	Effervescent sachets	3	0.87
3.	Tablets	80	23.19
4.	Coated tablets	1	0.29
5.	Effervescent tablets	3	0.87
6.	Capsules	81	23.48
7.	Solutions	18	5.22
8.	Infusions	1	0.29
9.	Gels	3	0.87
10.	Total	345	100.0


## CONCLUSION

An observational study based on information in medical sources for multisupplements with L – Arginine shows different trade form preparations: powders, effervescent sachets, tablets, coated tablets, effervescent tablets, capsules, solutions, infusions, gels. From the assessment of the results it is obvious, that in the most common cases L – Arginine is combined with: L – Citrulline, L – Glutamic acid, L – Lysine, L – Ornithine and Vitamin B<sub>6</sub>.

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