



High Intensity  
Interval Training  
(HIIT)

NAFTA TRAINING

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Understanding  
the Basics

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## CHAPTER 1: What is HIIT

- Background
- Who can perform HIIT
- Benefits of HIIT
- HIIT Workout Programs
- How HIIT Compares to Other
- Concerns with HIIT Programs

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## Background

- 1937
- 1940-1950
- 1970

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## What is HIIT?

- High-intensity interval training (HIIT), also called high-intensity intermittent exercise (HIE) or sprint interval training (SIT), is a form of **interval training**, a **cardiovascular exercise** strategy alternating short periods of intense **aerobic exercise** with less intense recovery periods, until too exhausted to continue. Though there is no universal HIIT session duration, these intense workouts typically last under 30 minutes, with times varying based on a participant's current fitness level.
- HIIT workouts provide improved **athletic capacity** and **condition** as well as improved **glucose metabolism**. Compared with other regimens, HIIT may not be as effective for treating **hyperlipidemia** and **obesity**, or improving muscle and bone mass.<sup>44</sup> However, research has shown that HIIT regimens produced significant reductions in the fat mass of the whole-body.<sup>44</sup> Some researchers also note that HIIT requires "an extremely high level of subject motivation" and question whether the general population could safely or practically tolerate the extreme nature of the exercise regimen.<sup>1</sup>

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## What is HIIT?

- HIIT is training done at:
- High intensity (PRE > 8/10) or 90%+ VO<sub>2</sub> peak activity over short intervals (30s or less but some say out to 5 mins...) followed by periods of varying (depending on the fitness level of the athlete) periods of recovery performed at low intensity
- Recovery is not full but too short can lower the intensity and therefore outcome or goal of the session
  - Is it aerobic?
  - Is it anaerobic/lactic?

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## High-Intensity Interval Training

- Specialized form of IT
  - Short intervals of max intensity exercise-low to moderate intensity exercise
- Similarities to traditional interval training
  - Differences include:
    - Increased EPOC
    - Burn more fat
    - Limits muscle loss
- To get the benefits from HIIT
  - push yourself past the upper end of your aerobic zone & allow your body to replenish your anaerobic energy system during the recovery intervals
- HIIT involve *maximum* effort, not simply a higher heart rate
  - there are many different approaches to HIIT
    - different numbers of high and low intensity intervals
    - different levels of intensity during the low intensity intervals
    - different lengths of time for each interval
    - different numbers of training sessions per week

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## Guidelines for HIIT

- designed for people who want to boost overall cardiovascular fitness, endurance and fat loss without losing muscle mass
- Before starting the program, you should be able to exercise for at least 20-30 minutes at 70-85% of maxHR
- gradually build up your training program so that you don't overdo it
- warm up and cool down
- Work as hard as you can during the high intensity intervals, until you feel the burning sensation in your muscles indicating that you have entered your anaerobic zone
- If you experience any chest pain or breathing difficulties during your HIIT workout, **cool down** immediately
- HR should be at 70% of maxHR during recovery
  - If it is not: shorten work intervals and/or lengthen recovery intervals

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## How HIIT Works

- High Intensity
- After Burn
- Constant Change
- Effective Exercise Combinations

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## Benefits of HIIT

- Increase Metabolism
- Increase Afterburn Effect
- Improves Aerobic Capacity
- Improves Heart Health
- Reduces Blood-sugar levels
- Eliminates Exercise Boredom
- Challenging
- Quick

## HIIT Benefits

- Effective Weight Loss
- Fast, Flexible and Fun
- Lose Fat, NOT MUSCLE
- Improved Heart Health

## What You Need

- Footwear
- Towel
- Foam Roller
- Yoga Mat
- Watch or Timer

## Who Can Perform HIIT

- o ACSM GUIDELINES
- o Virtually anyone can participate

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## HIIT Workout Programs

- o The Fartlek Method
- o The Tabata HIIT Workout
- o The Gibala Regimen
- o The 10-20-30 Program

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## HIIT vs Other

- o Crossfit
- o METCon3
- o Turbo Fire
- o Insanity Workout
- o Zumba

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## Concerns with HIIT

- Medical Clearance

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## CHAPTER 2: The Science Behind HIIT

- Energy and the Body's Use of Oxygen
- Sleep-Surprising Connection
- Aerobic Aspects of HIIT
- Anaerobic Aspects of HIIT
- Overtraining Syndrome
- It Comes Down to the Fuel

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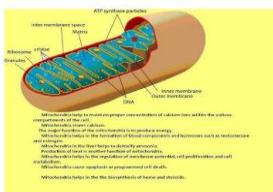
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## Energy and the Body's Use of Oxygen



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## Sleep-Surprising Connection

- HIIT is an effective strategy to minimize sleep deprivation

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## Aerobic Aspects to HIIT

1. Increased cardiac muscle mass
2. Increased stroke volume
3. Increased disposal of metabolic wastes
4. Increased oxidative enzymes and efficiency
5. Faster diffusion rates of oxygen and fuel into muscle
6. Increased left ventricle dilation and chamber volume
7. Increased carbohydrate sparing (thus greater use for fat as fuel)
8. Increase in mitochondria (energy factory of cell)
9. Increase in cell regulatory mechanisms of metabolism
10. Increased fat oxidation
11. Increased expression of fatigue-resistance slow twitch muscle fibers

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## Anaerobic Aspects to HIIT

- Fat Burning Longer
- Its Efficient
- Increase your Metabolism

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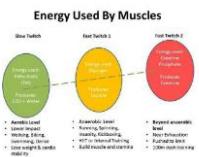
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## Anaerobic



## Overtraining

- “Get your daily fitness HIIT with our signature class! An intense half hour comprised of many bodyweight exercises and cardio, this class is a total body workout. Encouraged to push each move to **your maximum effort**, you should feel **completely wiped at the end of this class**”
- This is just how to achieve the maximum effects of a HIIT workout, and can result in overtraining.
- Overtraining** is the result of giving your body more work or stress than it can handle. Overtraining occurs when a person experiences stress and physical trauma from exercise faster than their body can repair the damage.
- Overtraining results from a variety of physiological sources including a buildup of metabolic waste, strain on the nervous and immune systems, and micro tears in the muscles. It can also be both physical and mentally, with symptoms ranging from elevated morning blood pressure, changes in one's mood (anxiety, depression, irritability), susceptibility to illness, chronic fatigue and muscle and joint aches.
- Ways to prevent, or counter the effects of overtraining include proper training regimen, rest, reduce volume and intensity, sleep and manual therapy such as deep-tissue massage.

## Overtraining-cont



## CHAPTER 3: HIIT and Nutrition

- Understanding the Fueling Process
- It is all about Carbohydrates
- But Not Just Carbohydrates
- Your Diet and HIIT
- Don't neglect proper hydrations
- A word about Toxins

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### Understanding the Fueling Process

- Carbohydrates
- Fats
- Proteins
- Water
- Vitamins
- Minerals

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### It is all about Carbohydrates

- Are the source of the energy that fuels muscle function

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## But Not Just Carbohydrates

- o Proteins
- o Vitamins
- o Minerals
- o Processed Foods

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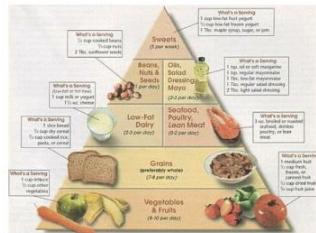


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## Your Diet and Hiit




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## Hydration

- o 2-3 gallons of water per day
- o It provides the fluidity to blood to transport oxygen and nutrients
- o Water helps regulate body temperature
- o Hydration facilitates digestion and other body functions
- o Water helps flush out and remove cellular wastes and toxins

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## Toxins



## The body detoxifies in several ways:

- Digestive tract
- Liver
- Kidneys
- Respiratory system and lungs
- Lymphatic System
- Skin

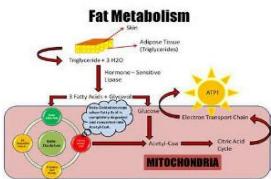
## CHAPTER 4: HIIT and Weight Loss

- The Body becomes a fat burning machine
- HIIT Makes the entire body work
- Lose weight while you rest
- What about calories
- When and what to eat
- Targeting those problem areas

## Detoxification Pathways



## The Body becomes a fat burning machine



## HIIT MAKES Body Work

- Reduce oxygen supply and increase blood carbon dioxide
- Increased body temperature
- Reduced available fuels stores-low blood sugar
- Reduced body fluids-dehydration
- Tissue damage-injury

## Lose Weight While you Rest

- Homeostasis

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## What about Calories

- Caloric Burn based on the intensity of the activity and the body weight of the person

Calories Burned per 30 Minutes of Activity at Your Weight									
	100	110	120	130	140	150	160	170	180
Resting (at Rest)	65	72	79	86	93	100	107	114	121
Walking (1.5 mph)	116	124	132	140	148	156	164	172	180
Swimming (20 ft pool)	230	241	252	263	274	285	296	307	318
Swimming (25 ft pool)	250	261	272	283	294	305	316	327	338
Swimming (33 ft pool)	260	271	282	293	304	315	326	337	348
Swimming (40 ft pool)	270	281	292	303	314	325	336	347	358
Swimming (50 ft pool)	280	291	302	313	324	335	346	357	368
Swimming (66 ft pool)	290	301	312	323	334	345	356	367	378
Swimming (82 ft pool)	300	311	322	333	344	355	366	377	388
Swimming (100 ft pool)	310	321	332	343	354	365	376	387	398
Swimming (120 ft pool)	320	331	342	353	364	375	386	397	408
Swimming (140 ft pool)	330	341	352	363	374	385	396	407	418
Swimming (160 ft pool)	340	351	362	373	384	395	406	417	428
Swimming (180 ft pool)	350	361	372	383	394	405	416	427	438
Swimming (200 ft pool)	360	371	382	393	404	415	426	437	448
Swimming (220 ft pool)	370	381	392	403	414	425	436	447	458
Swimming (240 ft pool)	380	391	402	413	424	435	446	457	468
Swimming (260 ft pool)	390	401	412	423	434	445	456	467	478
Swimming (280 ft pool)	400	411	422	433	444	455	466	477	488
Swimming (300 ft pool)	410	421	432	443	454	465	476	487	498
Swimming (330 ft pool)	420	431	442	453	464	475	486	497	508
Swimming (360 ft pool)	430	441	452	463	474	485	496	507	518
Swimming (400 ft pool)	440	451	462	473	484	495	506	517	528
Swimming (440 ft pool)	450	461	472	483	494	505	516	527	538
Swimming (480 ft pool)	460	471	482	493	504	515	526	537	548
Swimming (520 ft pool)	470	481	492	503	514	525	536	547	558
Swimming (560 ft pool)	480	491	502	513	524	535	546	557	568
Swimming (600 ft pool)	490	501	512	523	534	545	556	567	578
Swimming (660 ft pool)	500	511	522	533	544	555	566	577	588
Swimming (720 ft pool)	510	521	532	543	554	565	576	587	598
Swimming (780 ft pool)	520	531	542	553	564	575	586	597	608
Swimming (840 ft pool)	530	541	552	563	574	585	596	607	618
Swimming (900 ft pool)	540	551	562	573	584	595	606	617	628
Swimming (960 ft pool)	550	561	572	583	594	605	616	627	638
Swimming (1020 ft pool)	560	571	582	593	604	615	626	637	648
Swimming (1080 ft pool)	570	581	592	603	614	625	636	647	658
Swimming (1140 ft pool)	580	591	602	613	624	635	646	657	668
Swimming (1200 ft pool)	590	601	612	623	634	645	656	667	678
Swimming (1260 ft pool)	600	611	622	633	644	655	666	677	688
Swimming (1320 ft pool)	610	621	632	643	654	665	676	687	698
Swimming (1380 ft pool)	620	631	642	653	664	675	686	697	708
Swimming (1440 ft pool)	630	641	652	663	674	685	696	707	718
Swimming (1500 ft pool)	640	651	662	673	684	695	706	717	728
Swimming (1560 ft pool)	650	661	672	683	694	705	716	727	738
Swimming (1620 ft pool)	660	671	682	693	704	715	726	737	748
Swimming (1680 ft pool)	670	681	692	703	714	725	736	747	758
Swimming (1740 ft pool)	680	691	702	713	724	735	746	757	768
Swimming (1800 ft pool)	690	701	712	723	734	745	756	767	778
Swimming (1860 ft pool)	700	711	722	733	744	755	766	777	788
Swimming (1920 ft pool)	710	721	732	743	754	765	776	787	798
Swimming (1980 ft pool)	720	731	742	753	764	775	786	797	808
Swimming (2040 ft pool)	730	741	752	763	774	785	796	807	818
Swimming (2100 ft pool)	740	751	762	773	784	795	806	817	828
Swimming (2160 ft pool)	750	761	772	783	794	805	816	827	838
Swimming (2220 ft pool)	760	771	782	793	804	815	826	837	848
Swimming (2280 ft pool)	770	781	792	803	814	825	836	847	858
Swimming (2340 ft pool)	780	791	802	813	824	835	846	857	868
Swimming (2400 ft pool)	790	801	812	823	834	845	856	867	878
Swimming (2460 ft pool)	800	811	822	833	844	855	866	877	888
Swimming (2520 ft pool)	810	821	832	843	854	865	876	887	898
Swimming (2580 ft pool)	820	831	842	853	864	875	886	897	908
Swimming (2640 ft pool)	830	841	852	863	874	885	896	907	918
Swimming (2700 ft pool)	840	851	862	873	884	895	906	917	928
Swimming (2760 ft pool)	850	861	872	883	894	905	916	927	938
Swimming (2820 ft pool)	860	871	882	893	904	915	926	937	948
Swimming (2880 ft pool)	870	881	892	903	914	925	936	947	958
Swimming (2940 ft pool)	880	891	902	913	924	935	946	957	968
Swimming (3000 ft pool)	890	901	912	923	934	945	956	967	978
Swimming (3060 ft pool)	900	911	922	933	944	955	966	977	988
Swimming (3120 ft pool)	910	921	932	943	954	965	976	987	998
Swimming (3180 ft pool)	920	931	942	953	964	975	986	997	1008
Swimming (3240 ft pool)	930	941	952	963	974	985	996	1007	1018
Swimming (3300 ft pool)	940	951	962	973	984	995	1006	1017	1028
Swimming (3360 ft pool)	950	961	972	983	994	1005	1016	1027	1038
Swimming (3420 ft pool)	960	971	982	993	1004	1015	1026	1037	1048
Swimming (3480 ft pool)	970	981	992	1003	1014	1025	1036	1047	1058
Swimming (3540 ft pool)	980	991	1002	1013	1024	1035	1046	1057	1068
Swimming (3600 ft pool)	990	1001	1012	1023	1034	1045	1056	1067	1078
Swimming (3660 ft pool)	1000	1011	1022	1033	1044	1055	1066	1077	1088
Swimming (3720 ft pool)	1010	1021	1032	1043	1054	1065	1076	1087	1098
Swimming (3780 ft pool)	1020	1031	1042	1053	1064	1075	1086	1097	1108
Swimming (3840 ft pool)	1030	1041	1052	1063	1074	1085	1096	1107	1118
Swimming (3900 ft pool)	1040	1051	1062	1073	1084	1095	1106	1117	1128
Swimming (3960 ft pool)	1050	1061	1072	1083	1094	1105	1116	1127	1138
Swimming (4020 ft pool)	1060	1071	1082	1093	1104	1115	1126	1137	1148
Swimming (4080 ft pool)	1070	1081	1092	1103	1114	1125	1136	1147	1158
Swimming (4140 ft pool)	1080	1091	1102	1113	1124	1135	1146	1157	1168
Swimming (4200 ft pool)	1090	1101	1112	1123	1134	1145	1156	1167	1178
Swimming (4260 ft pool)	1100	1111	1122	1133	1144	1155	1166	1177	1188
Swimming (4320 ft pool)	1110	1121	1132	1143	1154	1165	1176	1187	1198
Swimming (4380 ft pool)	1120	1131	1142	1153	1164	1175	1186	1197	1208
Swimming (4440 ft pool)	1130	1141	1152	1163	1174	1185	1196	1207	1218
Swimming (4500 ft pool)	1140	1151	1162	1173	1184	1195	1206	1217	1228
Swimming (4560 ft pool)	1150	1161	1172	1183	1194	1205	1216	1227	1238
Swimming (4620 ft pool)	1160	1171	1182	1193	1204	1215	1226	1237	1248
Swimming (4680 ft pool)	1170	1181	1192	1203	1214	1225	1236	1247	1258
Swimming (4740 ft pool)	1180	1191	1202	1213	1224	1235	1246	1257	1268
Swimming (4800 ft pool)	1190	1201	1212	1223	1234	1245	1256	1267	1278
Swimming (4860 ft pool)	1200	1211	1222	1233	1244	1255	1266	1277	1288
Swimming (4920 ft pool)	1210	1221	1232	1243	1254	1265	1276	1287	1298
Swimming (4980 ft pool)	1220	1231	1242	1253	1264	1275	1286	1297	1308
Swimming (5040 ft pool)	1230	1241	1252	1263	1274	1285	1296	1307	1318
Swimming (5100 ft pool)	1240	1251	1262	1273	1284	1295	1306	1317	1328
Swimming (5160 ft pool)	1250	1261	1272	1283	1294	1305	1316	1327	1338
Swimming (5220 ft pool)	1260	1271	1282	1293	1304	1315	1326	1337	1348
Swimming (5280 ft pool)	1270	1281	1292	1303	1314	1325	1336	1347	1358
Swimming (5340 ft pool)	1280	1291	1302	1313	1324	1335	1346	1357	1368
Swimming (5400 ft pool)	1290	1301	1312	1323	1334	1345	1356	1367	1378
Swimming (5460 ft pool)	1300	1311	1322	1333	1344	1355	1366	1377	1388
Swimming (5520 ft pool)	1310	1321	1332	1343	1354	1365	1376	1387	1398
Swimming (5580 ft pool)	1320	1331	1342	1353	1364	1375	1386	1397	1408
Swimming (5640 ft pool)	1330	1341	1352	1363	1374	1385	1396	1407	1418
Swimming (5700 ft pool)	1340	1351	1362	1373	1384	1395	1406	1417	1428
Swimming (5760 ft pool)	1350	1361	1372	1383	1394	1405	1416	1427	1438
Swimming (5820 ft pool)	1360	1371	1382	1393	1404	1415	1426	1437	1448
Swimming (5880 ft pool)	1370	1381	1392	1403	1414	1425	1436	1447	1458
Swimming (5940 ft pool)	1380	1391	1402	1413	1424	1435	1446	1457	1468
Swimming (6000 ft pool)	1390	1401	1412	1423	1434	1445	1456	1467	1478
Swimming (6060 ft pool)	1400	1411	1422	1433	1444	1455	1466	1477	1488
Swimming (6120 ft pool)	1410	1421	1432	1443	1454	1465	1476	1487	1498
Swimming (6180 ft pool)	1420	1431	1442	1453	1464	1475	1486	1497	1508
Swimming (6240 ft pool)	1430	1441	1452	1463	1474	1485	1496	1507	1518

## When and What

- 1-1.5 hours before Workout
- Do not eat immediately after
- Numerous meals are better than 3 regular

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## Targeting those Areas

- Proper Form and Technique
- Belly fat

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## CHAPTER 5: HIIT and Cardio

- Make any cardio activity a HIIT Workout
- Sample Cardio Workouts

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## Make Cardio HIIT

- 5 days-45 minutes
- 3 days-20-30 minutes
- Burns fat without turning to protein synthesis for energy

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## Which Body is Best



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## Start

- 5 Min Warm Up
- Alternate High Intensity and moderate intensity over 10-20 minutes

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## Sample Cardio Workouts

- Work Seconds/Recovery Seconds

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## Easier

- Works Seconds/Recovery Seconds
  - 10/30
  - 15/45
  - 30/90
  - 60/180
  - 90/270
  - 120/360

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## Harder

- Works Seconds/Recovery Seconds
  - 10/20
  - 15/30
  - 30/60
  - 60/120
  - 90/180
  - 120/240

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## Hardest

- Works Seconds/Recovery Seconds
  - 10/10
  - 15/15
  - 30/30
  - 60/60
  - 90/90
  - 120/120

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## Killer

- Works Seconds/Recovery Seconds
  - 10/5
  - 15/8
  - 30/15
  - 60/30
  - 90/45
  - 120/60

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## Sample Cardio Workouts

- Bicycling
- Cardio Kickboxing
- Elliptical Machine
- Jump Roping
- Roller Blading
- Running
- Spinning
- Sprinting
- Stair Running
- Sprinting
- Swimming
- Treadmill

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## CHAPTER 6: HIIT And Cross Training

- Cross Training Workouts
- Scheduling Cross Training Sessions
- Choosing HIIT Workout Activities
- Sample HIIT Workout Progression

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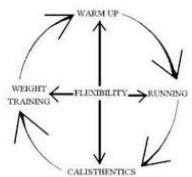
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### Cross Training Workouts



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### Cross Training Workouts

- Core Strengthening
  - Bicycle Crunch
  - Bridge
  - Single Leg Bridge
  - Lunge
  - Jume Lunge
  - Plank/Side Plank
  - Push up Lat Row

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## Cross Training Workouts

- o Cross Country Skiing
- o Deep Water Running
- o Kayaking
- o Kickboxing
- o Pilates
- o Rowing
- o Yoga

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## Scheduling Cross Training Sessions

- o Performed 3 Times per Week
- o Morning vs Afternoon

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## Choosing HIIT Workouts Activities

- o Major Muscle Groups
- o Intervals

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## Sample Workout

Week	Warms up	Work Interval (Max Intensity)	Recovery Interval (60-70% MHR)	Repeat	Cool Down	Total Workout Time
1	5 min.	30 sec.	2 min.	2 times	5 min.	15 min.
2	5 min.	30 sec.	2 min.	3 times	5 min.	17.5 min.
3	5 min.	30 sec.	2 min.	4 times	5 min.	20 min.
4	5 min.	1 min.	4 min.	2 times	5 min.	20 min.
5	5 min.	1 min.	4 min.	3 times	5 min.	25 min.
6	5 min.	1 min.	4 min.	4 times	5 min.	30 min.
7	5 min.	1.5 min.	4 min.	2 times	5 min.	21 min.
8	5 min.	1.5 min.	4 min.	3 times	5 min.	26.5 min.
9	5 min.	1.5 min.	4 min.	4 times	5 min.	32 min.
10	5 min.	2 min.	5 min.	2 times	5 min.	24 min.
11	5 min.	2 min.	5 min.	3 times	5 min.	31 min.

## CHAPTER 7: HIIT And Endurance

- o What is improved Endurance
- o How HIIT Benefits Overall Endurance
- o HIIT Programs For Different Types of Endurance
- o How Much is Too Much

## What is Improved Endurance

- o Is the ability of both cardiac or skeletal muscles and the entire musculoskeletal system to sustain or generate a force over a period of time.

## Long Term Endurance

- Depends on aerobic metabolism

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## Short Term Endurance

- Depends on anaerobic metabolism

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## Progressive Endurance Training

- Designed to cause adaptations to the actual heart muscle

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## HIIT Benefits Overall Endurance

- Less time
- VO<sub>2</sub> Max
- Mitochondria
- Increase in Fatty Acid Oxidation
- More Efficient Calorie Burn After Exercise

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## Different Types of Endurance

- Power Athlete
- Endurance Athlete

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## How Much is Too Much

- Overtraining Syndrome
- Rest Days

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## CHAPTER 8: HIIT and Weight Lifting

- Incorporating HIIT into a Weight Workout
- How HIIT Cardio Boosts Weight Training
- A Word About Nutritional Supplements

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## Incorporating HIIT into a Weight Workout

- Warm Up
- Performance Training
- Recovery Phase

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## CHAPTER 9: Sample Exercises and How to Perform Them

- Exercise Options for HIIT
  - Dynamic Warm Up
  - Level 1
  - Level 2
  - Level 3
  - Upper Body
  - Lower Body
  - Core

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## Dynamic Warm-Up

- Inner Thigh Mobility
- Peel with Reach
- Hip Flexor Release to Walking Lunge
- Calf and Ankle Mobility
- Upper Back Rotation
- Kneeling Push Up

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## Level 1 Routine

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## Level 2 Routine

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**Level 3 Routine**

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**Upper Body Exercise**

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**Lower Body Exercise**

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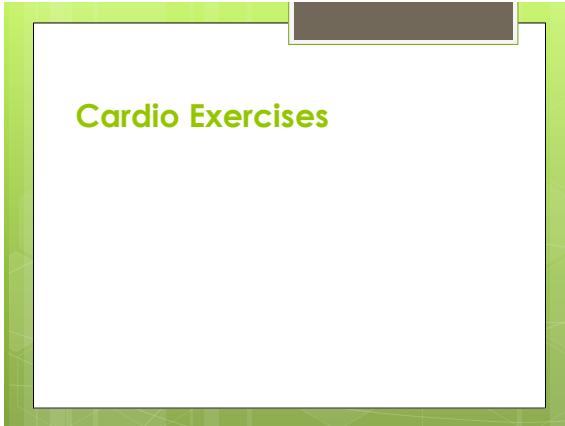
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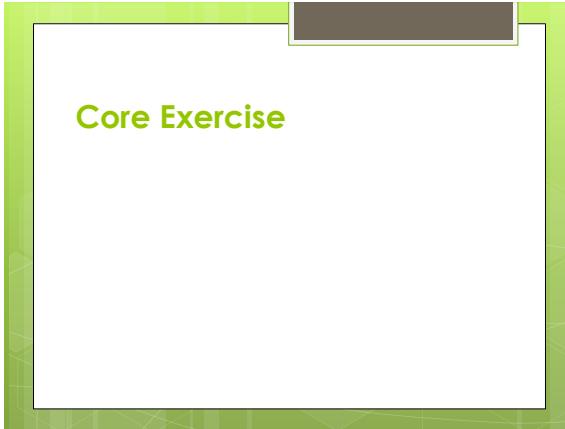
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<b>Sample-6 Minute Workout</b>			
<b>8 Weeks Workouts</b>			
<b>Week 1 (30 min)</b> 1. Large forward lunge 2. Mountain climbers	<b>Week 2 (30 min)</b> 1. Push-ups 2. Mountain climbers	<b>Week 3 (30 min)</b> 1. Push-ups 2. Mountain climbers	<b>Week 4 (30 min)</b> 1. Chair push-ups 2. Mountain climbers
<b>Week 5 (30 min)</b> 1. Squat lunge 2. Mountain climbers	<b>Week 6 (30 min)</b> 1. Mountain climbers 2. Plank	<b>Week 7 (30 min)</b> 1. Squat lunge 2. Mountain climbers	<b>Week 8 (30 min)</b> 1. Push-ups 2. Mountain climbers
<b>Week 9 (30 min)</b> 1. Alternating back lunge 2. Mountain climbers	<b>Week 10 (30 min)</b> 1. Squat lunge 2. Mountain climbers	<b>Week 11 (30 min)</b> 1. Squat lunge 2. Mountain climbers	<b>Week 12 (30 min)</b> 1. Mountain climbers 2. Plank
<b>Week 13 (30 min)</b> 1. Squat with side lunge 2. Mountain climbers	<b>Week 14 (30 min)</b> 1. Squat lunge 2. Mountain climbers	<b>Week 15 (30 min)</b> 1. Squat lunge 2. Mountain climbers	<b>Week 16 (30 min)</b> 1. Squat lunge 2. Mountain climbers
<b>Week 17 (30 min)</b> 1. Squat with side lunge 2. Mountain climbers	<b>Week 18 (30 min)</b> 1. Squat lunge 2. Mountain climbers	<b>Week 19 (30 min)</b> 1. Squat lunge 2. Mountain climbers	<b>Week 20 (30 min)</b> 1. Chair push-ups 2. Mountain climbers
<b>Week 21 (30 min)</b> 1. Mountain climbers to upgrade cardio 2. Mountain climbers	<b>Week 22 (30 min)</b> 1. Squat lunge 2. Mountain climbers	<b>Week 23 (30 min)</b> 1. Squat lunge 2. Mountain climbers	<b>Week 24 (30 min)</b> 1. Squat lunge 2. Mountain climbers
<b>Week 25 (30 min)</b> 1. Low Altitude curve lunge 2. Mountain climbers	<b>Week 26 (30 min)</b> 1. Mountain climbers 2. Mountain climbers	<b>Week 27 (30 min)</b> 1. Mountain climbers 2. Mountain climbers	<b>Week 28 (30 min)</b> 1. Mountain climbers 2. Mountain climbers
<b>Week 29 (30 min)</b> 1. Walking ultimate push-ups 2. Mountain climbers	<b>Week 30 (30 min)</b> 1. Walking ultimate push-ups 2. Mountain climbers	<b>Week 31 (30 min)</b> 1. Walking ultimate push-ups 2. Mountain climbers	<b>Week 32 (30 min)</b> 1. Walking ultimate push-ups 2. Mountain climbers
<b>Week 33 (30 min)</b> 1. Walking ultimate push-ups 2. Mountain climbers	<b>Week 34 (30 min)</b> 1. Walking ultimate push-ups 2. Mountain climbers	<b>Week 35 (30 min)</b> 1. Walking ultimate push-ups 2. Mountain climbers	<b>Week 36 (30 min)</b> 1. Walking ultimate push-ups 2. Mountain climbers
<b>Week 37 (30 min)</b> 1. Walking ultimate push-ups 2. Mountain climbers	<b>Week 38 (30 min)</b> 1. Walking ultimate push-ups 2. Mountain climbers	<b>Week 39 (30 min)</b> 1. Walking ultimate push-ups 2. Mountain climbers	<b>Week 40 (30 min)</b> 1. Walking ultimate push-ups 2. Mountain climbers
<b>Week 41 (30 min)</b> 1. Push-ups 2. Mountain climbers	<b>Week 42 (30 min)</b> 1. Push-ups 2. Mountain climbers	<b>Week 43 (30 min)</b> 1. Push-ups 2. Mountain climbers	<b>Week 44 (30 min)</b> 1. Push-ups 2. Mountain climbers
<b>Additional Options</b>			

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## Sample-30 Minute Workout

Day 1 - Lower Body Day	Day 2 - Upper Body Day	Day 3 - Core Day
Warm Up	Warm Up	Warm Up
Lower Body Foundation moves	Upper Body Foundation Moves	Core Foundation Moves
Max interval and mixed interval - Focus on core, upper body, cardio	Max interval and mixed interval - Focus on lower body, core, cardio	Max interval and Mixed Interval - Focus on lower body, upper body, cardio
Game	Game	Game
Challenge	Challenge	Challenge
CoolDown	CoolDown	Cool Down

## Take home points:

1. As little as six sessions of HIIT over two weeks, or a total of only around 15 minutes of very intense exercise (a cumulative energy expenditure of ~600 kJ or ~143 kcal), can increase oxidative capacity in skeletal muscle and improve performance during tasks that rely mainly on aerobic energy metabolism (Gibala, 2007)

## Take home points:

2. Major changes in body composition can result from incorporating HIIT into a client/athletes program due to many reasons, particularly around improvements in insulin sensitivity.
3. It can add fun and variety into an exercise program that lacks intensity.

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Questions?

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