

THE
S.M.A.R.T
—  METHOD  —

FOR STRENGTH & CONDITIONING

MID WEST REGIONAL DRUGS & ALCOHOL FORUM
HEALTH SERVICE EXECUTIVE



MID WEST REGIONAL
DRUGS & ALCOHOL FORUM

INFORMATION BOOKLET

FOREWORD

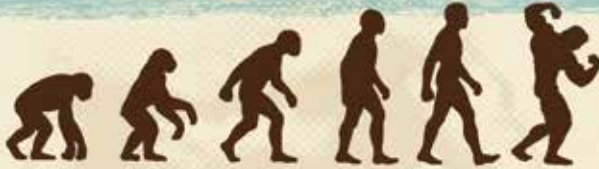
This publication describes general fundamental elements of nutrition and training required for safe and effective muscle building. By putting this advice into practice and adhering to a personal training and nutritional plan for a sustained length of time the desired result should be seen.

ACKNOWLEDGEMENTS

The booklet was developed by the HSE Pharmacy Needle Exchange (PNEX) Programme and was written with the assistance of **Leighton Bellinger** (B.A degree in Health & Leisure, REPS qualified personal trainer, Northern Ireland Fitness Model Association Europe Mr Physique & Mr Athletic 2014, under 21s) and of **John Campbell** (Image and Performance Enhancing Drugs Worker).

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INTRODUCTION & GOALS



This booklet is a general guide to bodybuilding in a safe and enjoyable manner. Advice should be sought from a personal trainer certified in body building for individual training programme.

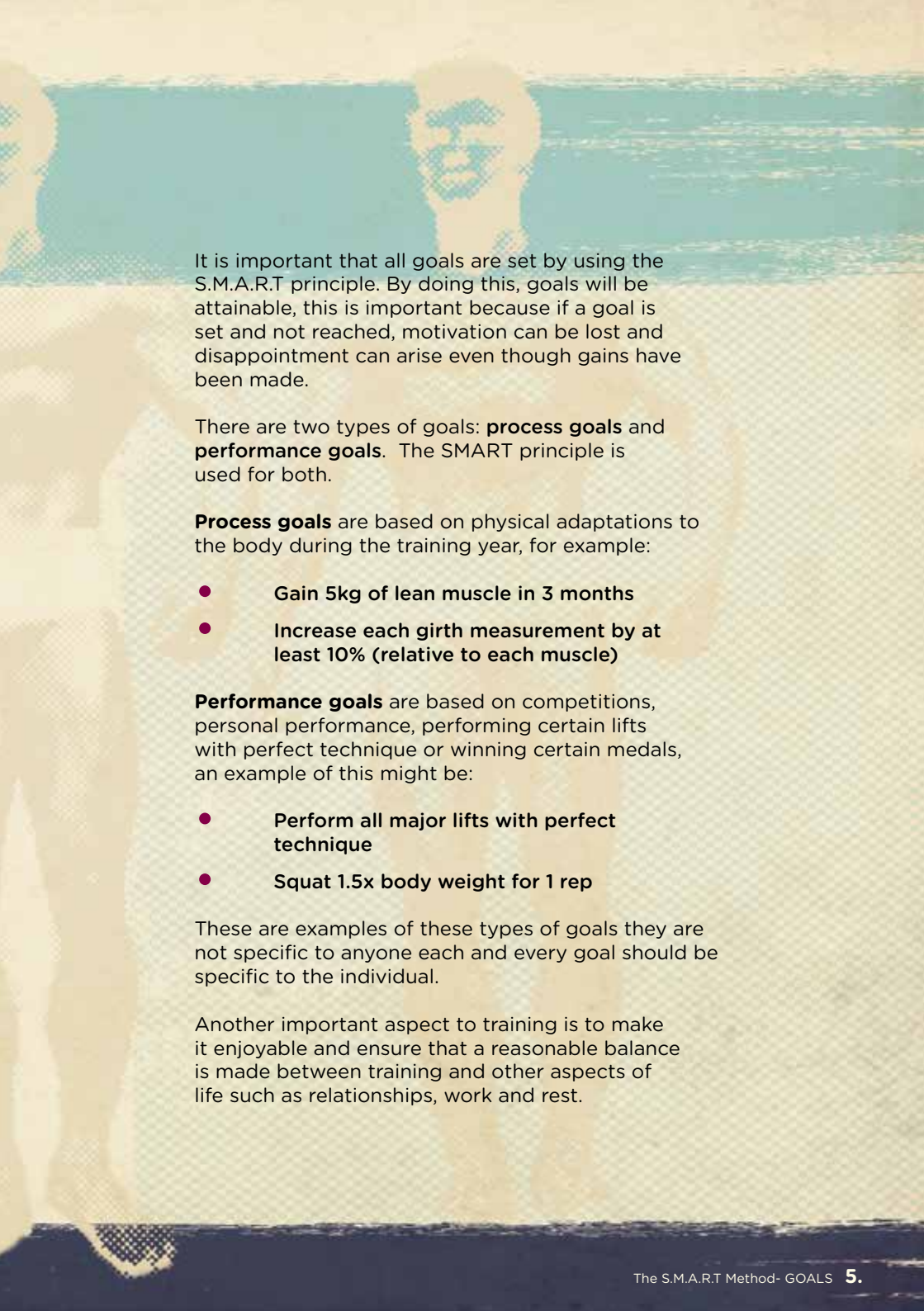
The most important means of achieving goals is to have goals in the first place.

James R Ball (2007)

In the fitness world goals play a vital part of progression and documenting how things are improving over short/long periods of time. This means that both short term and long term goals should be developed. To properly develop these goals it is important to make sure they are **S.M.A.R.T** goals i.e.



Specific
Measureable
Attainable
Realistic
Time bound



It is important that all goals are set by using the S.M.A.R.T principle. By doing this, goals will be attainable, this is important because if a goal is set and not reached, motivation can be lost and disappointment can arise even though gains have been made.

There are two types of goals: **process goals** and **performance goals**. The SMART principle is used for both.

Process goals are based on physical adaptations to the body during the training year, for example:

- **Gain 5kg of lean muscle in 3 months**
- **Increase each girth measurement by at least 10% (relative to each muscle)**

Performance goals are based on competitions, personal performance, performing certain lifts with perfect technique or winning certain medals, an example of this might be:

- **Perform all major lifts with perfect technique**
- **Squat 1.5x body weight for 1 rep**

These are examples of these types of goals they are not specific to anyone each and every goal should be specific to the individual.

Another important aspect to training is to make it enjoyable and ensure that a reasonable balance is made between training and other aspects of life such as relationships, work and rest.

NUTRITION

Nutrition is a vital component of any athletes progression, “we are what we eat” is an expression of how important our diet is, even more so for athletes.



Bodybuilders may seem to eat an enormous amount of food but the amount is specifically calculated for them based on their weight, height, age and training cycle in order for them to gain or maintain their muscle mass.

Every individual is different and therefore it is important that each nutrition/diet plan is specifically designed for each individual. The diet of an experienced professional bodybuilder will not be suitable for a person starting to gain muscle mass as they will likely be heavier and have different nutritional requirements

The information below provides general nutritional advice for those who wish to adopt a healthier approach to nutrition; general gym users and people starting bodybuilding training. The information is not designed for in-season bodybuilders; physique athletes; or any specific weight category sport, which would require specific individualised diet plans.






PROTEIN

Protein is an important nutrient needed by everyone on a daily basis. It is made up of essential and non-essential amino acids, which are also known as the “building blocks” for a healthy body. Protein has a number of different roles within the body.

- **Building and repairing muscles and bones**
- **Repairing body cells**
- **Providing a source of energy**
- **Controls many of the important processes related to metabolism within the body.**



Sources of protein should vary in the diet. Lean meats such as chicken, turkey and fish (mainly white fish) are good sources of protein. Other sources of protein include nuts, seeds, milk, red meats and protein shakes.

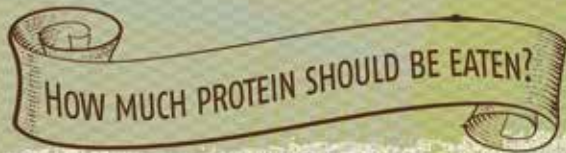
Protein consumed in food is broken down through digestion into individual amino acids. These amino acids are absorbed and changed by the body in order to create new protein “building blocks” for use by the body.

There are 22 types of amino acid and they are divided into two groups: **essential** and **non-essential** amino acids. There are 14 non-essential amino acids which can be produced by the body and do not have to be derived from food.



The body cannot produce the remaining 8 amino acids and these are called “essential amino acids” and must be derived from food ingested. The body needs all 22 types of amino acid to carry out its functions properly.

Protein sources that contain all of the 8 essential amino acids are called complete proteins.



This depends on the person's age, weight and training cycle. As a general rule of thumb to calculate the amount of protein needed for an athlete to build muscle mass the athlete must eat 0.9 - 1.2 grams of protein multiplied by pounds of body weight.

Example 160lb man would need between
144–192 grams of protein each day.

160 pounds x 0.9 grams = 144 grams protein/day
or
160 pounds x 1.2 grams = 192 grams protein/day

This would insure the athlete would have a sufficient amount of protein to recover his muscles during protein synthesis.

CARBOHYDRATES

The best way to understand carbohydrates is to break down what they do. The body breaks down carbohydrates to produce glucose, which is a process known as glycolysis. Glucose is used for making energy in the body. A certain amount of glucose is stored in the body mainly in the liver and muscles but once the glucose is used up it must be refilled through food in our diet.

There are two types of carbohydrates simple and complex. Simple carbohydrates come from foods such as milk, fruit, table sugar and sweets. Complex carbohydrates come from starches like cereal, bread, beans, potatoes, and starchy vegetables. Complex carbohydrates are generally richer in fibre which means sugar is released more slowly in the gut and avoids sugar highs and lows. When choosing grains to eat always choose the wholegrain option such as wholegrain pasta, bread, rice, etc, rather than the refined option, which is usually white.



This depends on the training cycle and training goals i.e. weight gain, loss, or maintenance. Generally carbohydrates should make up 40-55% of the total calorie allowance for the day. In order to work out the estimated amount of calories needed to be consumed to maintain body weight the Harris Benedict (1919) formula is used.

www.globalrph.com/harris-benedict-equation.htm

FATS

Fat is probably the most misunderstood nutrient. Eating excess fat can cause unwanted health effects, however, fat plays an important role within our diets. Fat accomplishes many things: It gives energy for activities, providing 9 calories per gram, surrounds and protects vital organs, takes part in the function and structure of the cells of the body, gives a longer lasting feeling of fullness, regulates hormonal production, balances body temperatures, and transports fat soluble vitamins.

Saturated fats remain solid at room temperature, are found in animal sources and palm oil and in excess are linked to unhealthy effects such as heart disease and cancer.



Unsaturated fats are found in oils derived from plants and are liquid at room temperature. The type of fats found in these oils contain an essential fat the body needs called linoleic acid. The body cannot manufacture linoleic acid, thus, it is an essential fatty acid that must be supplied through the diet.



Fat intake should make up less than 30% of your daily calories, depending on individual preference. Less than 10% should be in the form of saturated fat.

FRUIT & VEGETABLES

Fruit and vegetables should form a large part of dietary intake. They are full of nutrients and vitamins that the body needs for repair, maintenance, well-being and overall health. They are also low in calories, (exceptions being bananas and avocados) and high in fibre, and therefore are excellent for increasing feelings of fullness. Fruit and vegetables also contribute to the overall energy intake required to carry out daily activities and exercise.



Exercise results in the production of breakdown products called free radicals within the body which can result in cell damage due to a process called oxidative stress. The effects of oxidative stress on sporting performance may include fatigue, muscle damage and reduced immune function. The antioxidants found in fruit and vegetables play a major role in protecting the body against oxidative stress and subsequent effects on performance. Studies have demonstrated that dietary sources of antioxidants provide protection against the production of free radicals.

Vegetables should be eaten raw where possible and lightly steamed when cooked in order to ensure nutrients and vitamins are not destroyed in the cooking process. It is important to eat a variety of fruit and vegetables. A good guideline is to eat the colors of the rainbow which would ensure a varied amount of fruit and vegetables is eaten.

WATER

Like any athlete water plays an integral part of the diet of a bodybuilder/physique model or general gym user. Water is essential for optimum body function and adequate water intake is vital. Water is essential for function such as the breakdown of fats in the liver and the conversion of glucose into a form suitable for storage in the body. Adequate hydration is also essential for ensuring toxins are removed from the body.



Water should be taken in steadily throughout the day, a little every hour, rather than being taken in large quantities first thing in the morning or last thing at night. Water should be taken especially before/during and after training when the body needs it most.

NUTRITION

SUMMARY

The body should be treated like a fire and fed gradually throughout the day, not all at once. Humans were originally hunter gatherers and are designed to eat often and in moderate portions which means that the body has a steady source of energy throughout the day to carry out its functions.

The guidance provided is broad as different diets are required depending on which sport the muscle gain is being used for. In rugby for example, a gain in functional muscle is required in order to improve rugby performance. A bodybuilder will require an increase in muscle size rather than an increase in functional muscle.

Consistency and long term adherence to the nutrition advice outlined above are essential in maximising muscular development. It is important also that food should be varied while following the nutritional guidance above or otherwise the body will become accustomed to the food and will slow down progress.


It may be difficult to stick to a strict diet and a reward day once a week will make it easier to keep to a diet plan and will help refuel the body.

SIMPLE NUTRITION TIPS:

- Make a food diary
- Plan meals in advance, (including food shopping)
- Prepare meals in advance
- Plan nutrition for the day to avoid unhealthy snacking

TRAINING

The information below provides general guidance on training types. Every person is different and therefore general training programmes are not provided in this booklet as it is important that training programmes should be specifically designed for each individual. A group of friends/gym users should not follow the same training plan as each will have different goals and have a different physical makeup. A training programme should follow the recognised Five Principles of Training i.e.:

- 
1. Overload
 2. Recovery
 3. Adaptation
 4. Specificity
 5. Reversibility

TYPES OF TRAINING

In order to ensure that a balance in physique is achieved every body part needs to be trained equally to avoid an end result of chicken legs or Popeye. If there is an imbalance in physique training sessions focussing on specific areas with both compound and isolation exercises can address the imbalance.

The different types of training each have different benefits relevant to different sports.





Sarcoplasmic hypertrophy is the growth of some of the components in the fluid, (called the sarcoplasm), surrounding the contractile muscle fibrils in muscle. Components include plasma, organelles and non-contractile proteins. The growth of these components results in an increase in muscle size, which is very relevant to the needs of a bodybuilder.

A specific type of training, i.e. hypertrophy training which involves low load, high volume training, is effective in increasing muscle protein synthesis and muscle mass.

Hypertrophy training generally consists of 8-12 reps of about 3 sets with rests in between repetitions. As training progresses and more volume is required, a superset (one followed by another with no rest), a blitz (one exercise after another of the same muscle with no rest), or a tri-set (3 exercises of the same group of muscles or assisting muscles with no rest) may be used to maximise the training volume in each session. These additional sets are not suitable for everyone but may be an option for more advanced gym users.

STRENGTH TRAINING

Although strength training is the main type of training used for those who require power such as powerlifters and endurance athletes, it is vital to all athletes including bodybuilders and physique athletes. Research has shown that heavy load strength training on the largest muscles in the body cause an increase in the release of hormones in the body which exert a muscle building effect on skeletal muscle. These hormones include testosterone, growth hormone and insulin-like growth factors and insulin (under certain conditions), which increase protein synthesis and therefore assist in sarcoplasmic hypertrophy.

EXAMPLE OF STRENGTH TRAINING

The heaviest weight possible should be used to do 3-6 reps of 4- 5 sets with 90 seconds - 2 minutes rest period between sets. If a person is able to do more than 6 reps then a heavier weight should be used instead. For safety reasons another person, i.e. a 'spotter,' should be present in order to assist with the weight, if needed.

SAFETY IN TRAINING

REMEMBER THE **3Bs**

BACK:

Keep a straight back throughout the entire exercise and never compromise the back during exercise

BASE:

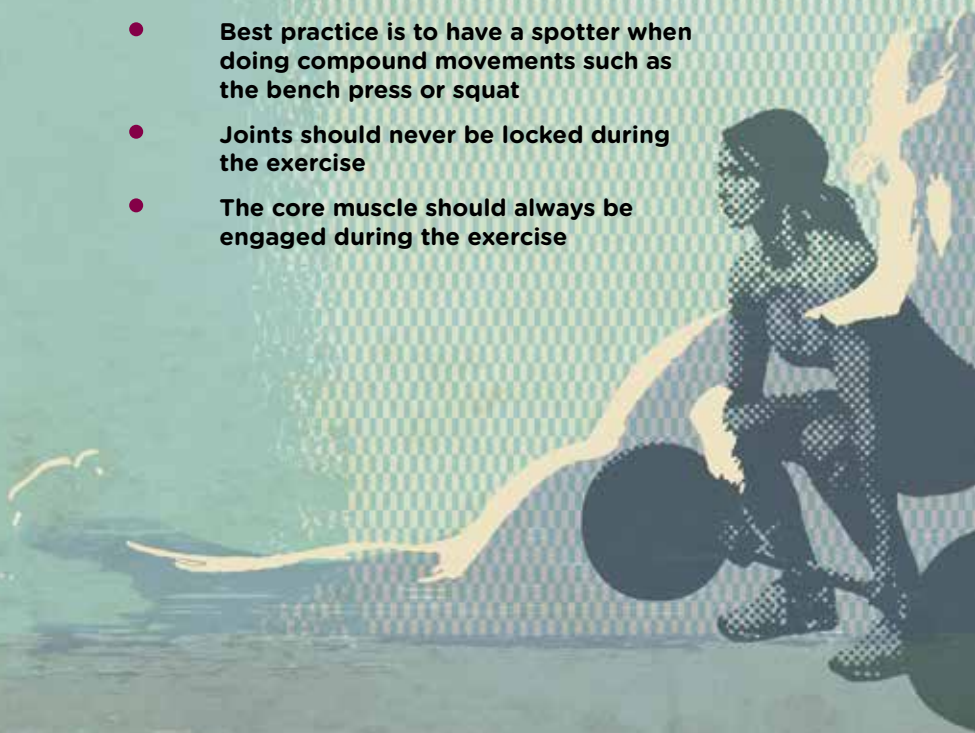
Make sure feet are firmly placed to ensure a stable base

BREATH:

Breathe out on exertion and never hold the breath during the exercise

IN ADDITION:

- Best practice is to have a spotter when doing compound movements such as the bench press or squat
- Joints should never be locked during the exercise
- The core muscle should always be engaged during the exercise





Long distance cardiovascular training using conventional techniques like uphill running or walking, long-distance walks, etc, can be used to reduce/cut excess body fat.

In addition, research has shown that high-intensity interval training (HITT) is an effective, time saving way of increasing the ability of the body to burn calories in a training session and, more importantly, to use fat as an energy source during the exercise, thereby reducing excess fat.

Both long distance cardio and HITT have their benefits and both are used to reduce fat. Variety should be used to prevent boredom. Variety also keeps the body guessing and helps prevent a fitness plateau developing whereby the body gets used to a certain level of exercise and no additional gain is seen.

NUTRITION & TRAINING SUMMARY

- **Keep a diary of nutrition and training and track your progress.**
- **Write down goals, a goal that is not documented is a dream.**
- **Plan ahead around special occasions/ holidays and how to manage these in terms of training and diet.**
- **Be positive, be consistent, be patient and progress will come in time.**



People may use drugs in order to increase their muscle size and strength. There have been some reports of the use of Performance Enhancing Drugs (PEDs) such as anabolic steroids in sport. However their use is associated with unwanted side-effects and risks and use is not recommended.

Most of the information available regarding PEDs use is from unreliable sources such as internet sites, media sources or PED users. The information available from these sources is not regulated and may be influenced by manufactures of the products. Research has shown that frequently people don't have enough information, or have the wrong information about illegal drugs.



POTENTIAL RISKS

ASSOCIATED WITH PEDs USE INCLUDE:

- risk of transmission of blood borne viruses such as HIV and hepatitis;
- risk of abscesses and other infection;
- risk of side-effects such as reduced fertility; tendon/ligament damage; acne; high blood pressure;
- risk of long term effects on the cardiovascular system;
- risk of liver damage;
- risks associated with using a product which potentially manufactured in a non-regulated environment such as an underground lab.

It is advisable to use the information in this booklet as the foundation for SMART training. If there are any concerns regarding training or training progression advice should be sought from a suitable person such as a coach, a physiotherapist or a GP.



For further information and advice on reducing the harms associated with performance enhancing drugs go to www.siedsinfo.co.uk (Public Health Wales)

TEMPLATE FOR WORKOUT SCHEDULE

	DATE:	EQUIPMENT & SETTINGS		SET 1		SET 2		SET 3	
	EXERCISE	NAME OR #	SEAT	LBS	REPS	LBS	REPS	LBS	REPS
CHEST									
BACK									
LEGS									
SHOULDERS									
BICEPS									
TRICEPS									
ABS & CORE									

TEMPLATE FOR MEAL PLANNER

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY
WORKOUTS							
BREAKFAST							
SNACK							
LUNCH							
SNACK							
DINNER							

Produced by the HSE Pharmacy Needle Exchange Programme

Drugs and Alcohol Helpline

1800 459 459

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