

Rules of the Game

7 questions, each with 4 answers to choose from (A, B, C, D).

Mark your answer on your answer sheet before the timer ends.

We will then reveal the correct answer.

If you have answered correctly you may tick off the next energy level.

The interface is titled "Quiz Answersheet" and features a vertical list of 7 questions. Each question has two columns of radio button options labeled A, B, C, and D. Question 1 has a checkmark in the B option. To the right of the questions is a vertical ladder of energy levels, each with a radio button and a text label. A grey arrow points downwards from the top of the ladder, indicating the progression path. The ladder levels are: 7 TeV (Full beam energy of the LHC), 172.9 GeV (Mass of the top quark), 91.2 GeV (Mass of the Z boson), 938.3 MeV (Mass of the proton), 105.7 MeV (Mass of the muon), 2.5 MeV (Mass of the up quark), and 0.511 MeV (Mass of the electron). The 0.511 MeV level has a checkmark in its radio button. On the left side of the ladder, there is a large blue number '0' and a 'W' symbol. On the right side, there are two curly brackets grouping the bottom two levels.

Quiz Answersheet

1 A. B.
C. D.

2 A. B.
C. D.

3 A. B.
C. D.

4 A. B.
C. D.

5 A. B.
C. D.

6 A. B.
C. D.

7 A. B.
C. D.

Your score
Tick off one energy step for each correctly answered question, starting at the bottom

7 TeV
Full beam energy of the LHC

172.9 GeV
Mass of the top quark

91.2 GeV
Mass of the Z boson

938.3 MeV
Mass of the proton

105.7 MeV
Mass of the muon

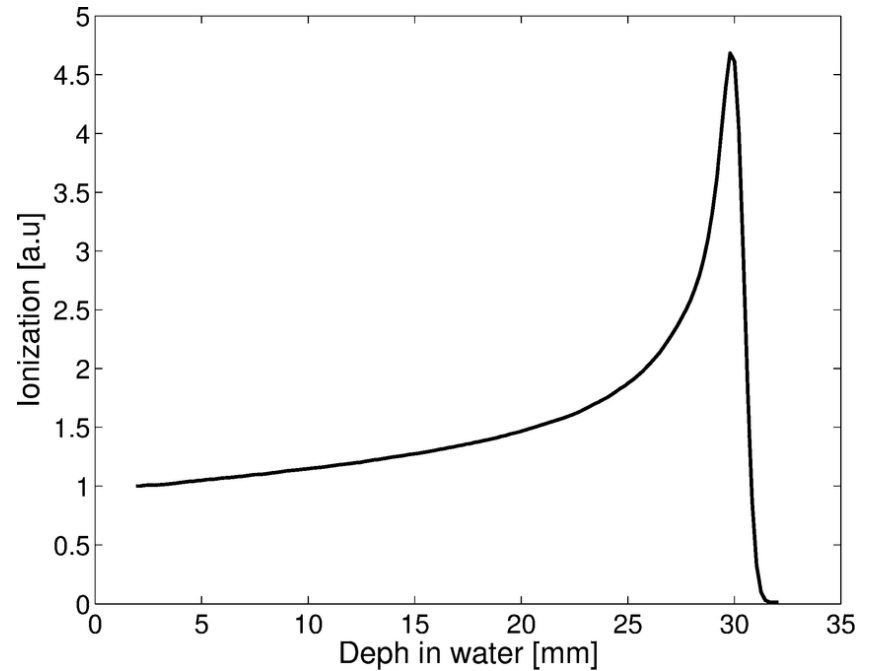
2.5 MeV
Mass of the up quark

0.511 MeV
Mass of the electron

Let's see which energy level you can reach!

REGIETY?

Which physical principle is important for Hadron Therapy?



1

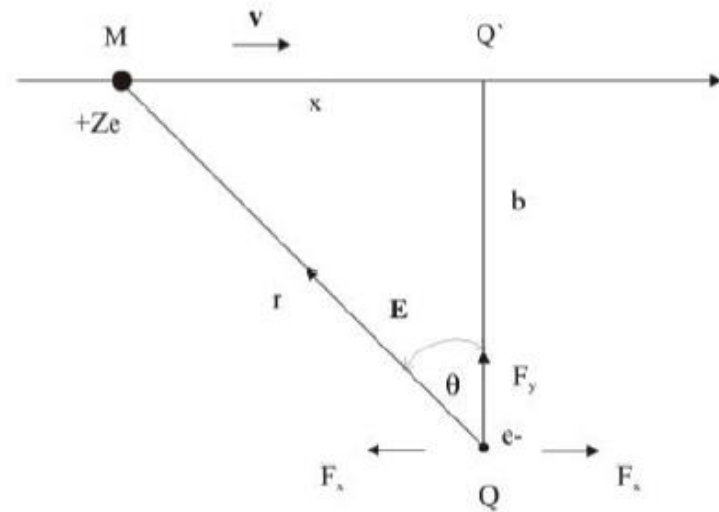
A. Brad's valey

B. Bragg valey

C. Bragg peak

D. Bill's peak

Which type of interaction is dominant between proton/ion beam with electrons from molecules of human body?



2

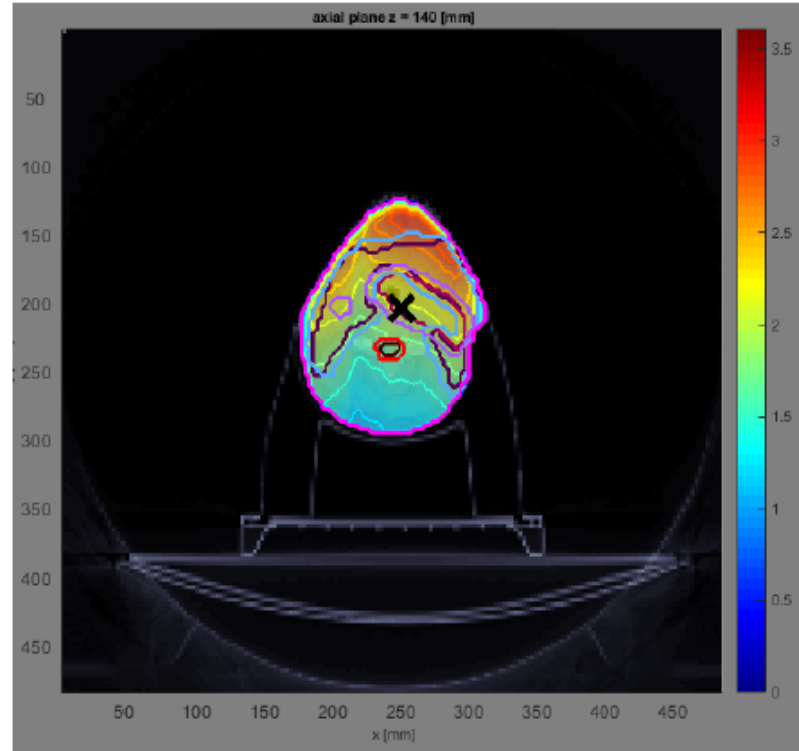
A. Electromagnetic force

B. Weak force

C. Strong force

D. Gravitational force

From the picture below, what kind of particles create such dose distribution?



3

A. Protons

B. Photons

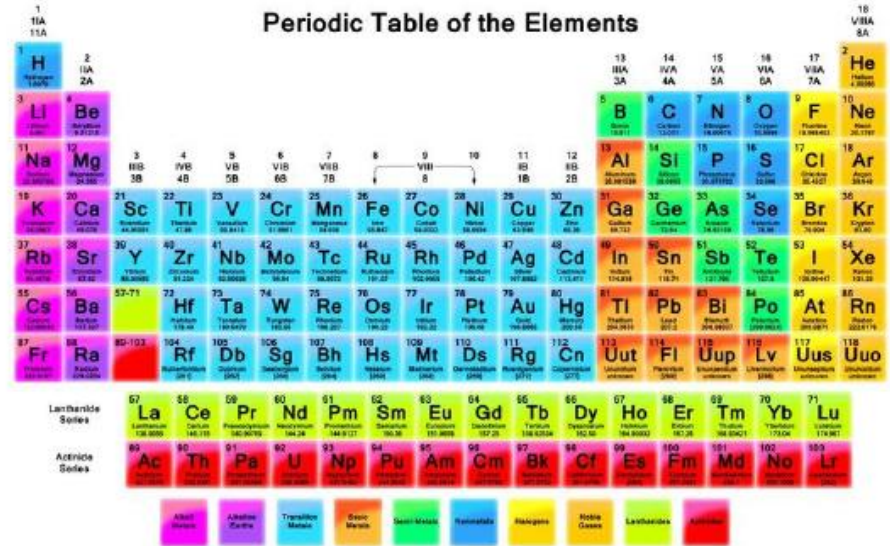
C. Carbon ions

D. Pions

Most commonly used ions for therapy?



Periodic Table of the Elements



1 1IA H	2 1IA 2A Li	3 1IA 3A Na	4 2A 4A Mg	5 3A 5A Al	6 4A 6A Si	7 5A 7A P	8 6A 8A S	9 7A 9A Cl	10 8A 10A Ar	11 1A 11A K	12 2A 12A Ca	13 3A 13A Sc	14 4A 14A Ti	15 5A 15A V	16 6A 16A Cr	17 7A 17A Mn	18 8A 18A Fe	19 9A 19A Co	20 10A 20A Ni	21 11A 21A Cu	22 12A 22A Zn	23 13A 23A Ga	24 14A 24A Ge	25 15A 25A As	26 16A 26A Se	27 17A 27A Br	28 18A 28A Kr	29 1A 29A Rb	30 2A 30A Sr	31 3A 31A Y	32 4A 32A Zr	33 5A 33A Nb	34 6A 34A Mo	35 7A 35A Tc	36 8A 36A Ru	37 9A 37A Rh	38 10A 38A Pd	39 11A 39A Ag	40 12A 40A Cd	41 13A 41A In	42 14A 42A Sn	43 15A 43A Sb	44 16A 44A Te	45 17A 45A I	46 18A 46A Xe	47 1A 47A Cs	48 2A 48A Ba	49 3A 49A La	50 4A 50A Ce	51 5A 51A Pr	52 6A 52A Nd	53 7A 53A Pm	54 8A 54A Sm	55 9A 55A Eu	56 10A 56A Gd	57 11A 57A Tb	58 12A 58A Dy	59 13A 59A Ho	60 14A 60A Er	61 15A 61A Tm	62 16A 62A Yb	63 17A 63A Lu	64 1A 64A Fr	65 2A 65A Ra	66 3A 66A Ac	67 4A 67A Th	68 5A 68A Pa	69 6A 69A U	70 7A 70A Np	71 8A 71A Pu	72 9A 72A Am	73 10A 73A Cm	74 11A 74A Bk	75 12A 75A Cf	76 13A 76A Es	77 14A 77A Fm	78 15A 78A Md	79 16A 79A No	80 17A 80A Lr
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A. Uranium ions

B. Argon ions

C. Oxygen ions

D. Carbon ions

4

What is the unit for absorbed dose?



5

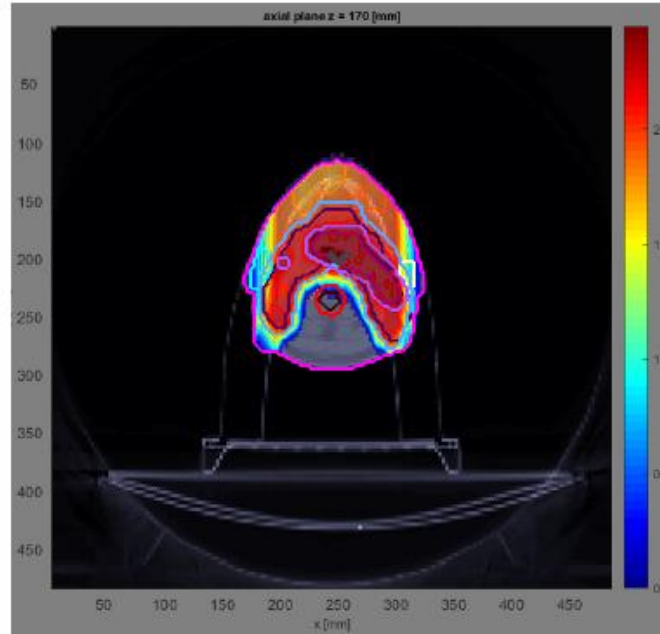
A. 1 Joule

B. 1 Newton

C. 1 Green

D. 1 Gray

Dose on the critical organs using
proton/ion therapy instead of X-ray
therapy is:



6

A. bigger

B. smaller

C. I don't know

D. equal

How do we call a treatment using ionizing radiation to kill cancer?



7

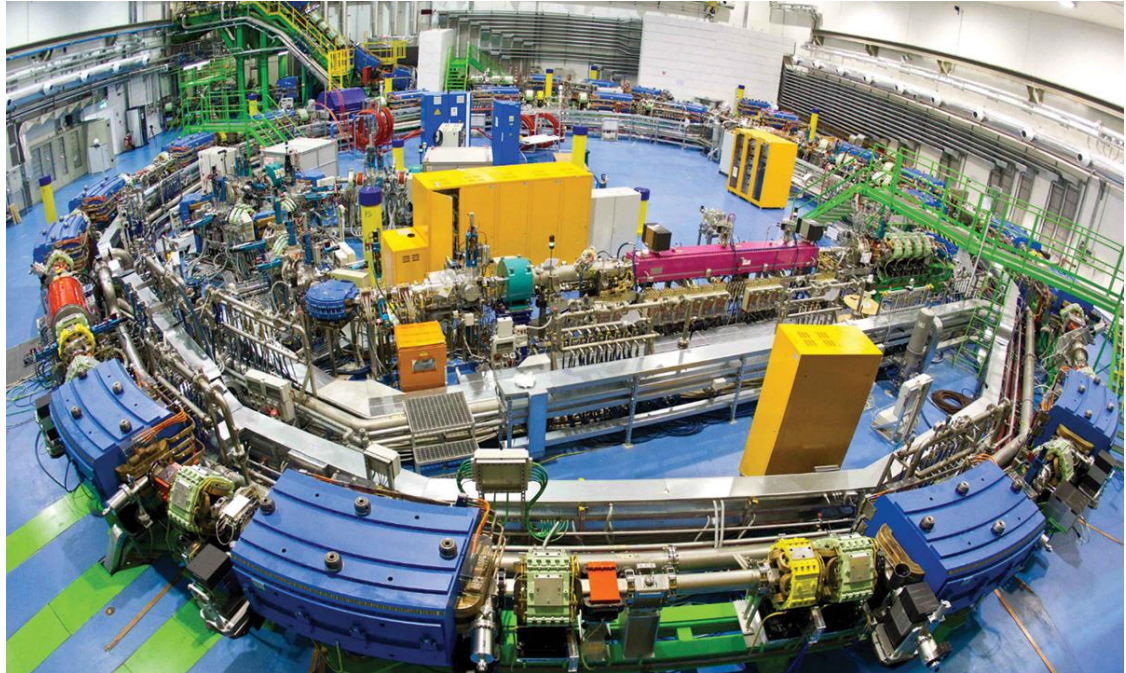
A. Radiotherapy

B. Radiodiagnostics

C. Radiophone

D. Radiology

Synchotrons are used for accelerating



9

A. Photons

B. Heavy particles

C. The patient

D. I don't know

We use a CT machine for



A. Radiation delivery

B. Reducing background radiation

C. Shielding the OARs

D. Imaging

10

Which energy level did
you reach?