

- ▶ **Leagues:**
 - ▶ Great league ($CP \leq 1500$),
 - ▶ Ultra league ($CP \leq 2500$),
 - ▶ Master league (no CP limit).
- ▶ **Moves:** They are all defined differently from PvE. In PvP, a move is defined by its power (the amount of damage it deals), its energy (the amount of energy it generates or uses) and its duration (the number of turns the move lasts, each turn lasts for 0.5s).
Three measures can be defined:
 - ▶ DPT stands for Damage per turn. Equivalent to DPS in non-PvP scenarios. Higher is better. Only for fast moves.
 - ▶ EPT stands for Energy per turn. Equivalent to EPS in non-PvP scenarios. Higher is better. Only for fast moves.
 - ▶ DPE stands for Damage per energy. DPE describes how efficiently you deal damage in comparison to the energy spent. Higher is better. Only for charged moves.

Examples of PvP stats for fast moves are:

Move	Power	Energy	Duration (s)	DPT	EPT
🔴 Mud Shot	3	9	2	1.50	4.50
🔴 Psycho Cut	3	9	2	1.50	4.50
🟡 Thunder Shock	3	9	2	1.50	4.5

Examples of PvP stats for charged moves are:

Move	Power	Energy	DPE
🔵 Hydro Cannon	90	40	2.25
🟢 Frenzy Plant	100	45	2.22
🟠 Blast Burn	110	50	2.20
🟢 Avalanche	90	45	2.00
🔵 Draco Meteor	150	75	2.00

For more details:

▶ **PvP moves**

- ▶ The **Effective Health (EH)** measures the bulkiness of a Pokémon and is computed via the formula:

$$EH = \frac{1}{900} \times (\text{DEF at considered level}) \times (\text{HP at considered level})$$

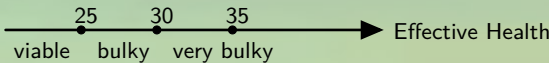
where DEF at considered level = (Base DEF + IV DEF) \times coeff_level

and HP at considered level = (Base HP + IV HP) \times coeff_level

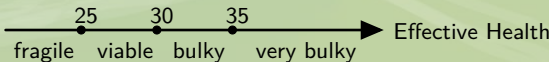
Examples of coefficients are

Level	Level 20	Level 25	Level 30	Level 35	Level 40
coeff_level	0.5974	0.667934	0.7317	0.76156384	0.7903

- ▶ For Great league ($CP \leq 1500$), a good effective health must be higher than 25.



- ▶ For Ultra league ($CP \leq 2500$) and Master league (no CP limit), a good effective health must be higher than 30. Below, the Pokémon remains fragile. The Pokémon can be considered as very bulky if its effective health is higher than 35.



Best Pokémon for PvP

► **Optimal IV and level (only for Great and Ultra leagues)**

We would like to compare Moltres and Charizard

Moltres

FIRE FLYING

Charizard

FIRE FLYING



ATK	251	223
DEF	181	173
HP	207	186

For Moltres, the effective stats are

ATK IV	DEF IV	HP IV	LVL	CP	ATK	DEF	HP	SUM	EH
15	15	15	25	2475	177	130	148	455	19240
13	15	14	25.5	2500	178	132	149	459	19668
0	15	3	27.5	2499	175	137	147	459	20139
1	3	15	27.5	2499	176	128	155	459	19840

For Charizard, the effective stats are:

ATK IV	DEF IV	HP IV	LVL	CP	ATK	DEF	HP	SUM	EH
15	15	15	30.5	2497	174	138	147	459	20286
15	0	0	35.5	2495	181	132	142	455	18744
0	15	15	34.5	2494	169	142	152	463	21584
15	13	14	31	2498	175	137	147	459	20139

Moltres (13, 15, 14) has better statistics for Ultra league than Moltres (15, 15, 15). For each league, there is an optimal IV set and level that maximises attack, defence and HP statistics. For Master league, the optimal IV set is (15, 15, 15) and optimal level is 40. Furthermore, Charizard (15, 13, 14) at level 31 and Moltres (0, 15, 3) at level 27.5 have exactly same statistics. To determine which one is most interesting in PvP, we must look at their moves.

For more details:

► More details on optimal IV

► **PvP simulator:**

► Pokebattler

► PvPoke

► Once you got your three medals, don't forget to steal their look:



Examples of Pokémon for Great league (CP ≤ 1500)

Altaria

DRAGON FLYING



Bastiodon

ROCK STEEL



Skarmory

STEEL FLYING



Ideal moveset

- Dragon Breath
- Dragon Pulse
- Sky Attack

- Smack Down
- Stone Edge
- Flamethrower

- Air Slash
- Sky Attack
- Flash Cannon

ATK

141

94

148

DEF

201

286

226

HP

181

155

163

Optimal IV / Level

(0,14,15), level 29

(8,15,15), level 40

(0,14,15), level 27.5

Weaknesses

ICE ROCK DRAGON FAIRY

FIGHT GROUND WATER

FIRE ELECTRIC

Medicham

FIGHT PSYCHIC



Deoxys (D)

PSYCHIC



Azumarill

WATER FAIRY



Ideal moveset

- Counter
- Power Up Punch
- Ice Punch

- Counter
- Psycho Boost
- Rock Slide

- Bubble
- Ice Beam
- Play Rough

ATK

121

144

112

DEF

152

330

152

HP

155

137

225

Optimal IV / Level

(15,15,15), level 40

(0,15,15), level 25.5

(8,15,15), level 40

Weaknesses

FAIRY GHOST FLYING

GHOST DARK BUG

ELECTRIC GRASS POISON

Venusaur

GRASS POISON



Umbreon

DARK



Lucario

FIGHT STEEL



Ideal moveset

- Vine Whip
- Frenzy Plant
- Sludge Bomb

- Snarl
- Foul Play
- Last Resort

- Counter
- Power Up Punch
- Shadow Ball

ATK

198

126

236

DEF

189

240

144

HP

190

216

172

Optimal IV / Level

(0,14,15), level 21

(0,15,15), level 27.5

(1,15,15), level 20.5

Weaknesses

ICE FIRE PSYCHIC GROUND

FIGHT FAIRY BUG

FIGHT GROUND FIRE



Examples of Pokémon for Ultra league (CP ≤ 2500)

Giratina (A) GHOST DRAGON



Cresselia PSYCHIC



Blastoise WATER



Ideal moveset

- Shadow Claw
- Dragon Claw
- Ancient Power

- Psycho Cut
- Future Sight
- Moonblast

- Water Gun
- Ice Beam
- Hydro Cannon

ATK

187

152

171

DEF

225

258

207

HP

284

260

188

Optimal IV / Level

(0,14,15), level 28

(0,13,15), level 37.5

(15,15,15), level 40

Weaknesses

FALSY GHOST DARK DRAGON ICE

GHOST DARK BUG

ELECTR GRASS

Giratina (O) GHOST DRAGON



Lucario FIGHT STEEL



Steelix STEEL GROUND



Ideal moveset

- Shadow Claw
- Shadow Ball
- Dragon Pulse

- Counter
- Power Up Punch
- Shadow Ball

- Dragon Tail
- Earthquake
- Crunch

ATK

225

236

148

DEF

187

144

272

HP

284

172

181

Optimal IV / Level

(0,13,14), level 25.5

(1,15,15), level 38.5

(15,15,15), level 40

Weaknesses

FALSY GHOST DARK DRAGON ICE

FIGHT FIRE GROUND

FIRE GROUND WATER FIGHT

Venusaur GRASS POISON



Lapras WATER ICE



Snorlax NORMAL



Ideal moveset

- Vine Whip
- Frenzy Plant
- Sludge Bomb

- Ice Shard
- Ice Beam
- Surf

- Lick
- Body Slam
- Outrage

ATK

198

165

190

DEF

189

174

169

HP

190

277

330

Optimal IV / Level

(1,15,14), level 39

(6,15,13), level 40

(0,12,15), level 29.5

Weaknesses

ICE FIRE PSYCHIC GROUND

ELECTR ROCK GRASS FIGHT

FIGHT

Examples of Pokémon for Master league (no CP limit)

Giratina (O)

GHOST DRAGON



Dialga

STEEL DRAGON



Lugia

PSYCHIC FLYING



Ideal moveset	Shadow Claw	Dragon Breath	Dragon Tail
	Shadow Ball	Iron Head	Sky Attack
	Dragon Pulse	Thunder	Hydropump
ATK	225	275	193
DEF	187	211	310
HP	284	205	235
Weaknesses	Fairy Ghost Dark Dragon Ice	Fight Ground	Electric Rock Ice Ghost Dark

Garchomp

DRAGON GROUND



Metagross

STEEL PSYCHIC



Melmetal

STEEL



Ideal moveset	Mud Shot	Bullet Punch	Thunder Shock
	Earthquake	Meteor Mash	Rock Slide
	Outrage	Earthquake	Thunderbolt
ATK	261	257	226
DEF	193	228	190
HP	239	190	264
Weaknesses	Ice Dragon Fairy	Fight Ground Fire	Ghost Dark Fire Ground

Giratina (A)

GHOST DRAGON



Mewtwo

PSYCHIC



Tyranitar

ROCK DARK



Ideal moveset	Shadow Claw	Psycho Cut	Smack Down
	Dragon Claw	Shadow Ball	Stone Edge
	Ancient Power	Focus Blast	Crunch
ATK	187	300	251
DEF	225	182	207
HP	284	214	225
Weaknesses	Fairy Ghost Dark Dragon Ice	Ghost Dark Bug	Fight Bug Fairy Ground Steel Water Grass