

- **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: <https://pokemongohub.net/post/pvp/pvp-move-stats-in-pokemon-go/>

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

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

where DEF at considered level = $(\text{Base DEF} + \text{IV DEF}) \times \text{coeff_level}$

Example of coefficients are

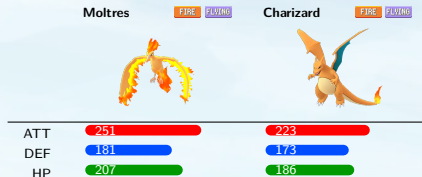
Level	Level 20	Level 25	Level 30	Level 35	Level 40
coeff_level	0.5974	0.667934	0.7317	0.76156384	0.7903

At level 40 (Master league),

$EH \leq 22,500$	very fragile
$22,500 < EH \leq 27,000$	fragile but viable
$27,000 < EH \leq 31,500$	bulky
$EH > 31,500$	very bulky

Best Pokémon for PvP

- ▶ **Leagues:** Great league ($CP \leq 1500$), Ultra league ($CP \leq 2500$), Master league (no CP limit).
- ▶ **Optimal IV and level (only for Great and Ultra leagues)** (read <https://pokemongohub.net/post/pvp/getting-ready-for-pvp/>)
We would like to compare Moltres and Charizard



For Moltres, the effective stats are

ATT IV	DEF IV	HP IV	LVL	CP	ATT	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:

ATT IV	DEF IV	HP IV	LVL	CP	ATT	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.

- ▶ Battle simulator: <https://www.pokebattler.com>, <https://pvpoke.com>



Great league (CP ≤ 1500)

Medicham

FIGHT PSYCH



Deoxys (D)

PSYCH



Azumarill

WATER FAIRY



Altaria

DRAGON FLYING



Bastiodon

ROCK STEEL



Ideal moveset	<div>Counter</div> <div>Power Up Punch</div> <div>Ice Punch</div>	<div>Counter</div> <div>Psycho Boost</div> <div>Rock Slide</div>	<div>Bubble</div> <div>Ice Beam</div> <div>Play Rough</div>	<div>Dragon Breath</div> <div>Dragon Pulse</div> <div>Sky Attack</div>	<div>Smack Down</div> <div>Stone Edge</div> <div>Flamethrower</div>
ATT	121	144	112	141	94
DEF	152	330	152	201	286
HP	155	137	225	181	155
Optimal IV / Level	(15,15,15), level 40	(0,15,15), level 25.5	(8,15,15), level 40	(0,14,15), level 29	(8,15,15), level 40
Weaknesses	FAIRY GHOST FLYING	GHOST DARK BUG	ELECTRIC GRASS POISON	ICE ROCK DRAGON FAIRY	FIGHT GROUND WATER
Comments					

Other alternatives:

- ▶ **Skarmory**: Air Slash, Sky Attack, Flash Cannon
- ▶ **Venusaur**: Vine Whip, Frenzy Plant, Sludge Bomb
- ▶ **Umbreon**: Snarl, Foul Play, Last Resort
- ▶ **Cresselia**: Psycho Cut, Future Sight, Moonblast



Ultra league (CP ≤ 2500)

Giratina (A)

GHOST DRAGON



Cresselia

PSYCHIC



Blastoise

WATER



Lucario

FIGHT STEEL



Steelix

STEEL GROUND



Ideal moveset	<ul style="list-style-type: none"> Shadow Claw Dragon Claw Ancient Power 	<ul style="list-style-type: none"> Psycho Cut Future Sight Moonblast 	<ul style="list-style-type: none"> Water Gun Ice Beam Hydro Cannon 	<ul style="list-style-type: none"> Counter Power Up Punch Shadow Ball 	<ul style="list-style-type: none"> Dragon Tail Earthquake Crunch
ATT	187	152	171	236	148
DEF	225	258	207	144	272
HP	284	260	188	172	181
Optimal IV / Level	(0,15,15), level 28	(0,13,15), level 37.5	(15,15,15), level 40	(1,15,15), level 38.5	(15,15,15), level 40
Weaknesses	Fairy, Ghost, Dark, Dragon, Ice	Ghost, Dark, Bug	Electric, Grass	Fight, Fire, Ground	Fire, Ground, Water, Fight
Comments					

Other alternatives:

- ▶ **Giratina (Origin)**: Shadow Claw, Shadow Ball, Ominous Wind
- ▶ **Venusaur**: Vine Whip, Frenzy Plant, Sludge Bomb
- ▶ **Typhlosion**: Shadow Claw, Blast Burn, Solar Beam
- ▶ **Kingdra**: Dragon Breath, Outrage, Hydro Pump



Master league (no CP limit)

Giratina (O)

GHOST DRAGON



Dialga

STEEL DRAGON



Lugia

PSYCHIC FLYING



Garchomp

DRAGON GROUND



Metagross

STEEL PSYCHIC



Ideal moveset	<ul style="list-style-type: none"> Shadow Claw Shadow Ball Dragon Pulse 	<ul style="list-style-type: none"> Dragon Breath Iron Head Thunder 	<ul style="list-style-type: none"> Dragon Tail Sky Attack Hydropump 	<ul style="list-style-type: none"> Mud Shot Earthquake Outrage 	<ul style="list-style-type: none"> Bullet Punch Meteor Mash Earthquake
ATT	225	275	193	261	257
DEF	187	211	310	193	228
HP	284	205	235	239	190
Weaknesses	FAIRY GHOST DARK DRAGON ICE	FIGHT GROUND	ELECTRIC ROCK ICE GHOST DARK	ICE DRAGON FAIRY	GHOST DARK FIRE GROUND
Comments					

Other alternatives:

- **Melmetal:** Thunder Shock, Rock Slide, Flash Cannon
- **Mewtwo:** Psycho Cut, Shadow Ball, Focus Blast
- **Tyranitar:** Smack Down, Crunch, Stone Edge
- **Dragonite:** Dragon Breath, Dragon Claw, Outrage
- **Giratina (A):** Shadow Claw, Dragon Claw, Ancient Power

Steal their look

Once you got your three medals, you can steal their look:

